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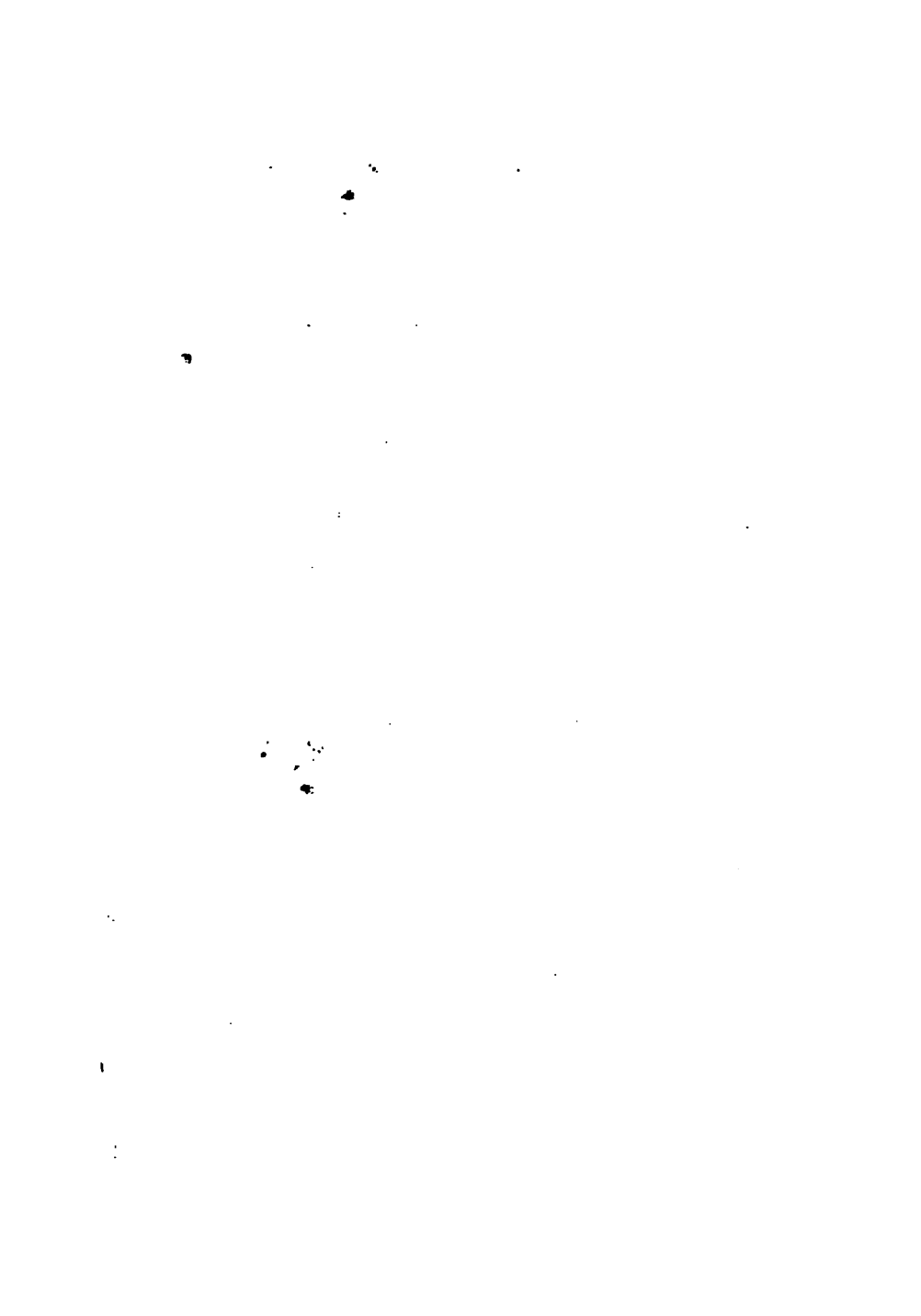


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PATENTS FOR INVENTIONS.

ABRIDGMENTS

OF

Specifications

RELATING TO THE

PREPARATION AND USE OF TOBACCO.

A.D. 1721-1866.

PRINTED BY ORDER OF THE COMMISSIONERS OF PATENTS.



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P R E F A C E .

THE Indexes to Patents are now so numerous and costly as to render their purchase inconvenient to a large number of inventors and others, to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Alphabetical, Subject-matter, and Reference Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the printed copies of the latter are sold have been added.

The number of Specifications from the earliest period to the end of the year 1866 amounts to 59,222. A large proportion of the Specifications enrolled under the old law, previous to 1852, embrace several distinct inventions, and many of those filed under the new law of 1852 indicate various applications of the single invention to which the Patent is limited. Considering, therefore, the large number of inventions and applications of inventions to be separately dealt with, it cannot be doubted that several properly belonging to the group which forms the subject of this volume have been overlooked. In the progress of the whole work such omissions will, from time to time, become apparent, and be supplied in second or supplemental editions.

This volume contains Abridgments of Specifications to the end of the year 1866. From that date the Abridgments have not been published in classes, but will be found in chronological order in the quarterly volumes of the "Chronological and Descriptive Index" (see List of Works at the end of this book). It is intended, however, to publish these Abridgments in classes as soon as the Abridgments of all the Specifications from the earliest period to the end of 1866 have appeared in a classified form. Until that takes place, the reader (by the aid of the Subject-matter Index for each year) can continue his examination of the Abridgments relating to the subject of his search in the Chronological and Descriptive Index.

This series of Abridgments includes not only the manufacture of tobacco, snuff, cigars, and cigarettes, but also that of pipes, cigar holders, tobacco pouches and boxes, snuff boxes, cigar cases, fusee cases, and fastenings for the same. All means of procuring light specially applicable to cigars and pipes have been admitted; consequently Specifications relating to fusees, splints, and similar matches (when expressly intended for such purpose) will be found abridged in the present series; and in order to render it as complete as possible, spittoons, pipes for protecting the tobacco plant, and advertising on pipes, to which matters a few inventors have turned their attention, have been introduced.

The Abridgments marked thus (* *) in the following pages were prepared for another series or class, and have been transferred therefrom to this volume.

B. WOODCROFT.

June, 1870.

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INTRODUCTION.

The word tobacco is most probably derived from the name given by the Indians to the instrument through which they inhaled the smoke, originally through their nostrils. The instrument, called by them *tabac* or *tabaco*, was a hollow cane shaped somewhat like a Y; the forked ends were inserted into their nostrils, the other was applied to the burning leaves. It has been asserted that the plant was named from the island of Tobago; but the fact is that Columbus gave the name to the island from a fancy that the southern part resembled the *tabac* in shape.

The name *Nicotiana* commemorates the introduction of the plant into France by Jean Nicot. In honour of the queen Catherine de Medici it was called *herbe de la reine*; from its supposed medicinal virtues it was styled *herbe sainte*, *herbe sacrée*, *panacée antarctique*, and *herbe propre à tous les maux*; but ultimately the Spanish name *Tabaco* given to it by Hernandez (who brought it into Spain) triumphed over all.

In proof of the reputed healing power of tobacco, Spenser in his *Fairy Queen* (1590) includes "divine tobacco" amongst the

" Herbes that mote him remedy."

Lilly (1597), in his play of "The woman in the moone," makes Pandora say,

" Gather me balme and cooling violets,

" And of our holy herb Nicotian."

Buttes (1599) thus treats of its digestive powers;

" Fruits, herbs, flesh, fish, whitemeats, spice, sauce, all

" Concoct are by tobacco's cordiall."

In the time of the plague (1665) tobacco was in great repute as a preventive against infection; it is said that no tobaccoists' houses were infected, nor those who smoked, especially if they did so in the morning. Pepys in his diary has the following entry:—The 7th June 1665 was "the hottest day that I ever felt in my life. This day, much against my will, I did in Drury Lane see

"two or three houses marked with a red cross, and 'Lord have mercy upon us' writ there. . . . It put me in an ill conception of myself and my smell, so that I was forced to buy some roll tobacco to smell to and chaw, which took away my apprehension."

Tobacco grows freely in a rich moist soil, which it is said to exhaust in a remarkable degree. As many as forty varieties have been noticed by botanists, most of them yielding tobacco for smoking, and all classed among the Solanaceæ and narcotic poisons. The principal varieties are the Virginian, or sweet-scented (*Nicotiana Tabacum*), the Syrian (*N. Rustica*), and the Shiraz (*N. Persica*). Shag, returns, and ordinary cut tobaccos are prepared from the first, Latakia and Turkish from the second, and the delicate tobaccos used in Persia from the third.

The plant requires considerable heat to come to perfection; tropical and temperate climates are said to be most favorable for its free development. It is found in all regions within the extreme boundaries of the temperate zones, and it was once grown extensively in the North Riding of Yorkshire, about Kelso and Jedburgh in Scotland, and in the county of Wexford in Ireland.

It demands constant attention from the cultivator, and under favorable circumstances ripens in about four months from the time of planting, that is, from May to September. When the plant has been cut down (close to the ground or even a little under the the surface), great care must be taken in sweating and drying it. The leaves are then stripped off and sorted; those which grow on the top of the stem, in the middle, and at the bottom are laid separately as being of different qualities; they are tied together in bundles of ten or twelve and again carefully dried, when they are ranged in casks horizontally, and are pressed so compactly that a hogshead 48 inches long and 30 or 32 inches in diameter will contain 1,000 lbs.

Shag tobacco is made from leaves stripped of their stalk or mid-rib, wetted, pressed together, and cut into shreds. Bird's eye contains a portion of the mid-rib as well as leaf. Some of the accompanying abridgments show the changes and improvements made of late years in the cutting machinery of the tobacco manufacturer.

The finest qualities of Havana tobacco contain 2 per cent. of *nicotine*, of Virginia about 6 per cent., and of that grown in

France 8 or 9 per cent. A few drops of the concentrated solution of nicotine will destroy life in man in from 2 to 5 minutes; consequently the nicotine contained in a small quantity of tobacco would, if inhaled, probably kill the smoker; *but it never is inhaled*, the greater portion being really burnt. Again anti-smokers talk of the danger of passing "carbonized vapour" through the lungs! *but it is not passed through*; the smoker draws the smoke into his mouth and then puffs it out.

The popularity of smoking soon led to the adulteration of tobacco. In Ben Jonson's "Bartholomew Fair" (1614), Ursula orders her tapster thus:—"Look to't, sirrah, you were best! "Three pence a pipe-full I will ha' made of all my whole halfe pound of tabacco, and a quarter of a pound of colts-foot mix't with it to eke it out."

Nearly every tree and plant which bear the remotest resemblance to tobacco have been employed for the purpose of adulteration with more or less success. Among the substances detected are rhubarb, dock, burdock, colts-foot, cabbage, lettuce, endive, chicory, Irish moss, fox-glove, thorn-apple, fustic, orris-root, valonia, beech, plaintain, oak, elm, peat-earth, bran, sawdust, barley meal, oatmeal, beanmeal, peameal, flour, starch, licorice, sugar, treacle, honey, glycerine, vegetable black, alum, lime, and nitre.

Irish roll tobacco has been bought and delivered in Birmingham, Manchester, and Newcastle, at 2s. 10d. per lb., or 4d. per lb. under the amount of duty, leaving the raw material, labour, and expenses altogether aside.

The origin of popular customs is generally involved in mystery, and tradition takes the place of history. Men of every race and climate have been using stimulants of one sort or another from the days of Noah. The Greeks have left us a notice of two plants which produced an effect on man. In the 9th book of the Odyssey, Ulysses, who in his wanderings homeward after the siege of Troy had come to the land of the Lotophagi (*Lotus eaters*), and had sent ashore three of his companions to reconnoitre, found to his horror that "whoever ate the honey-sweet fruit of the "lotus" was unwilling to leave the country, but wished to remain there among the Lotophagi, "feeding on lotus and forgetful of return." In the 4th book of Herodotus we read that at funerals the Scythians to purify their bodies throw hemp seed on to glowing stones, and "roar delighted with the fume arising therefrom;" he adds that "this serves them for a bath for they

"never wash themselves with water." Niebuhr (and most will agree with him) considers that the practice was intended not to produce a vapour bath but to bring about intoxication from the vapour of the hemp seed. Larcher quotes from "*Histoire des voyages*" a similar custom prevailing among the Indians of Hudson's Bay for the purpose of producing perspiration. A tradition exists in the Greek church that Noah was intoxicated by tobacco! This perhaps was originated by an anti-smoking priest. Dr. Yates asserts that he saw a representation of a smoking party in an ancient tomb in Egypt; most probably the picture represented glass blowers at work. There has been found a carved panel in Norfolk of the age of Edward III. (1327), and a pipe depends from the mouth of one figure; most likely some waggish idler added the pipe. In Irish antiquities figures have been found with pipes in their mouths, but the pipes are evidently modern additions.

When we consider the use of the *coca leaf* by the Peruvians, of the *betel nut* in Siam, Malacca, and Cochin China, of the *haschisch* (spelt also *hasheesh* and *hashish*) of the Arabs, Syrians, and other eastern people, and of the widely spread *opium*, we may almost agree with the writer in the "*Tobacco Trade Review*" that "each country has availed itself from time immemorial of some "indigenous member of the vegetable world and found therein a "solace similar to that now derived almost universally from the "tobacco plant."

Tobacco finds its way into the English market principally from—

Europe.—Germany, Holland, Saloniki, Hungary, Russia.

Asia.—China, East Indies, Latakia and other parts of Asiatic Turkey, Persia, Manilla.

N. America.—Virginia and other States, Mexico, Cuba, Haiti, Porto-Rico.

S. America.—Varinas, Brazil, Cumana.

In the first week of November, 1492, two sailors, sent by Columbus to explore Cuba, reported among things new and strange that they found the natives carrying with them lighted firebrands wherewith they lighted one end of small rolls of dried herbs; the other end they put between their lips, sucked the smoke through the roll, and then puffed it out through their noses and mouths.

In 1519 (during the conquest of Mexico) King Montezuma used to have his pipe brought with much ceremony by the chief

ladies of his court, after he had dined and washed his mouth with scented water.

1560 is the date assigned to the introduction of tobacco into Europe. Hernandez, a Spanish physician, brought some plants from Mexico for the inspection of Philip II.

France and Italy became acquainted with the plant about the same time. Jean Nicot, French ambassador to Portugal (1560) purchased at Lisbon some tobacco seed, and in the following year presented the French queen with some of the plants. Cardinal de Sainte-Croix, papal nuncio in Portugal, introduced tobacco into Italy.

Tobacco is said to have been imported into England in 1585 or 1586 by either Sir John Hawkins, Sir Francis Drake, Sir Walter Raleigh, or Mr. Ralph Lane, governor of Virginia. According however to Lobel the plant was cultivated in England before the year 1570, and was consumed by smoking in pipes by Sir W. Raleigh and his companions as early as 1584.

Lane in his "Manners and customs of the modern Egyptians" says, "it appears that tobacco was introduced into Turkey, Arabia, " and other countries of the East soon after the beginning of the " 17th century."

Tobacco was carried into India by the Frank nations about 1609.

The popular belief is that Sir W. Raleigh was the first smoker in England; at all events he rendered the practice fashionable and was faithful to the end in his love of tobacco. Aubrey writes that "he tooke a pipe of tobacco a little before he went to the " scaffold."

Tobacco was at first exhaled through the nostrils, and the original term for smoking was *drinking* tobacco. There are many allusions to the custom in authors of the period. In "Every " man out of his humour" the author notes a gallant who takes lessons in smoking:—"There we might see Sogliardo sit in a " chair holding his snout like a sow under an apple tree, while " the other opened his nostrils with a poking stick to give the " smoke a more free delivery." In "The triumphant widow" " a reverend old gentlewoman," being compelled to laugh while she was drinking, "did squirt the beer out of her nose as an " Indian does tobacco." In the catalogue of Rubens' effects (1640) a Dutch picture of smokers is called "The tobacco " drinkers."

Tobacco did not long escape persecution. James I., described in the "Witches frolic" as a gentleman—

"In quilted doublet and great trunk breeches,

"Who held in abhorrence tobacco and witches,"

besides writing his "Counterblaste to Tobacco," raised the import duty from 2*d.* to 6*s.* 10*d.* per lb. He also prohibited any one from importing tobacco who did not hold his letters patent, and he forbade the cultivation of the plant in England.

Sandys, in his travels, writes that he saw an unfortunate Turk conducted about the streets of Constantinople in 1610 "mounted backward on an ass," and "with a tobacco pipe driven through the cartilage of his nose," for the crime of smoking.

Pope Urban VIII., in 1624, and Pope Innocent, in 1690, excommunicated all such as used snuff or tobacco in churches. (*Tempora mutantur*; the present Pope is said to be very fond of a cigar.)

In Russia (1634) the nose of those who were convicted of smoking was cut off.

In Berne the use of tobacco ranked in the table of offences next to adultery.

In 1653 the Council of Appenzell ordered all innkeepers to inform against such as were found smoking in their houses, and when so detected the culprits were severely punished.

As late as 1719 the Senate of Strasburgh prohibited the cultivation of tobacco from an apprehension that it would diminish the growth of corn.

Taylor, the water poet (1580-1654), who had an equal enmity to tobacco and coaches, says, "it is a doubtful question whether the devil brought tobacco into England in a coach, for both appeared about the same time."

Snuff was originally recommended to cure pains in the head. Catherine de Medici was the first to use it. It soon became better known as an article of luxury; it was much patronised by the clergy, and this led to the anathema of Pope Urban. It was at first made by grating, and was in consequence called *tabac râpé*, whence is derived the word *rappee*. Many persons grated their own. The popularity of snuff increased after the great plague, and innumerable quotations might be given respecting the boxes and scented snuffs, together with the conceited airs, of the beaux of the age. To take snuff and to offer a box gracefully was part of a beau's education. Shakspeare had such a one in mind when,

in Henry IV., part 1, act 1, scene 3, he makes Hotspur describe a certain Lord, who—

“ Was perfumed like a milliner ;
 “ And ’twixt his finger and his thumb he held
 “ A pouncet-box, which ever and anon
 “ He gave his nose, and took ’t away again ;—
 “ Who, therewith angry, when it next came there,
 “ Took it in snuff.”

Poisons were sometimes mixed with scented snuffs. In 1712 the Duc de Noailles presented the Dauphiness of France with a box of such snuff. She took the snuff, and five days after died, complaining of sharp pains in the temples.

Large quantities of clay tobacco-pipes of various fanciful forms have been dug up in the vicinity of the city of Mexico. Prescott, in his “ Conquest of Mexico,” informs us that the Aztecs smoked pipes and cigars and took snuff in their day precisely as we do now.

The war-pipe of the Indians is a true tomahawk ; it is smoked through the reed handle, the tobacco being placed in a receptacle about the hatchet, and the handle being perforated its entire length. The calumet or pipe of peace is used only on great political or religious celebrations ; it is decorated with all the splendour of savage taste by the women who render it showy by the aid of eagles’ feathers of the brightest colours, beads of various hues, and bows of ribbon. The bowl is made of the sacred red pipe-stone, which is obtained from a quarry in the neighbourhood of Fort Dakotah, a military station on the Big Sioux river. There is a very poetical description of the peace-pipe in Longfellow’s “ Hiawatha.”

Pipe-clay is found chiefly in the isle of Purbeck and at Newton Abbot in Devonshire. The early period at which pipes were manufactured is established by the fact that the incorporation of the craft of tobacco-pipe makers took place on the 5th October, 1619. The original form of the pipe was a small cylindrical slanting bowl, with a thick straight stem, and a broad spur so that the pipe might be laid upright on the table. On the bottom of the spur was a device or the maker’s name. The Irish sudeen and the Scotch cutty pipe, and the coloring of them, were soon common. Radcliffe, in a poem termed “ A call to the Guard ” (1682), describes the soldiers—

“ With pipes black as their mouths
 “ And short as their pay.”

In Philip's "Splendid Shilling" (1703), his poor Author,

"From tube as black

"As winter's chimney or well polished jet,

"Exhales mundungus, ill-perfuming smoke ;

"Not blacker tube, nor of a shorter size

"Smokes Cambro-Briton.

Before pipes were invented, smokers used twisted leaves or cigars. In England the rich at first had silver pipes; the lower orders a walnut shell and a straw, which was passed from man to man round the table.

Ever since the beginning of pipe-making artists at home and abroad have been inventing something new in pipes, pipe bowls and stems, tobacco boxes, pouches, and stoppers; witness the abridgments in the present series.

Meerschaum, a magnesian mineral of somewhat earthy appearance, is found in certain parts of Anatolia, in the islands of Negropont and Samos, and on the shores of the Black Sea, and lately a vein has been discovered at Simla. The best is said to be obtained from Eski-shehr in Anatolia. When first dug up it is soft and lathers like soap, and consequently is used in the Turkish dominions as fuller's earth. Meerschaum bowls are soaked in oil or wax and afterwards polished; they absorb the essential oil of tobacco, and thus purify the smoke more than any others; perhaps, however, the lately introduced charcoal bowls are equally absorbent, although not equally handsome.

The use of tobacco increased greatly in the last century, and as many as 15 pages of Raithby's "Index to the Statutes at large" are filled with titles of laws relating to tobacco from the beginning of the reign of Queen Anne to the 49th year of George III. inclusive.

There were were imported into this country—

In 1791	about	9½ millions of lbs. of tobacco.		
In 1829	"	15	"	"
In 1850	upwards of	36	"	"
In 1860	"	51½	"	"
In 1864	"	67½	"	"
In 1865	"	68½	"	"
In 1866	"	57	"	"
In 1867	"	61	"	"
In 1868	"	52	"	"

May we not then conclude with a remark of the writer in the Tobacco Trade Review, "that a habit, and that not by any means an attractive one, practised by the untutored natives of a country entirely removed from western civilization, should ultimately spread over the whole of the earth's surface and become at once the luxury and the solace of millions of people, is one of the most remarkable circumstances which the history of mankind can show."

The preceding remarks have been collected principally from Fairholt's work on tobacco, from the Tobacco Trade Review, from the article "tobacco" in various encyclopædias and Ure's dictionary, and from the Blue books.

Many interesting woodcuts of old pipes and pictures, and many anecdotes, and extracts from writers wherein allusion is made to tobacco, will be found in Mr. Fairholt's valuable book.

PREPARATION AND USE OF TOBACCO.

PREPARATION AND USE OF TOBACCO.

A.D. 1721, August 12.—N° 434.

DE LA CHAUMETTE, ISAAC.—“The making of divers
“ engines, machines, and instruments of severall kindꝑ.” In a
long list of articles, “which were never before invented, and will
“ be of great vse to the publick,” the patentee mentions “two
“ snuff boxes, one with a slider, and the other with a sweep, out
“ of which snuff may be taken without pulling it out of the
“ pocket and without spilling.”

[No Specification enrolled. Letters Patent printed, price 4d.]

A.D. 1747, May 12.—N° 622.

SAGE, SAMUEL.—A new-invented machine for the cutting of
tobacco. “It is so contrived as to perform the operation for cut-
“ ting tobacco in a double manner, with two knives cutting at
“ one and the same time into two boxes by means of a double
“ crank upon one and the same bed, each of which boxes is drawn
“ out by a chain by the help of double iron wheels and catches.”

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 6th Report, p. 156.]

A.D. 1749, December 6.—N° 650.

SMITH, THOMAS.—“A new compound medicinal powder, to
“ be used in the nature of and which I call my medicinal
“ snuff.” The ingredients and the compounding are thus de-
scribed:—“Take two ounces of knotted margerum, six ounces of
“ marum, and two ounces of acrimony; one pound of aster
“ tobacco, and two ounces of balm, and one ounce of lily com-
“ vally; let them be all well pulverized in a mortar together, then
“ sifted fine off so as to be made snuff; then take one teaspoonful
“ struck for a dose up the nose as snuff, going to bed, and repeated
“ every six days as long as the patient sees convenient.”

The cures to be wrought by the snuff are, “capital disorders of
“ the hypochondriac and melancholy kind, as also of impostuma-

"tious agues in the head, ejection of polypusses, and various other and similar indispositions."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 6th Report, p. 123.]

A.D. 1759, February 10.—N^o 737.

BEDFORD, STEPHEN.—"A method of impressing in imitation engraving upon varnish laid upon copper, iron, paper, and other bodys, to be used in coach pannels, snuff boxes, and other kinds of merchandize, and impressions of foliages, figures, decorations, ornaments, and other devices." The patentee thus briefly describes his method of impressing:—"Ingrave any sort of works, figures, or decorations upon copper, or any other metal plates, and take off the impression with very thin rolled lead, and with such impression raised thereon you may impress the same work upon a body of varnish laid upon copper, iron, paper, and other bodys."

[Printed, 4d. No Drawings.]

A.D. 1766, March 25.—N^o 842.

JONES, JOHN.—"The mode and manner, as likewise the proper places for gathering, collecting, and mixing together divers herbs, now called the British herb tobacco, and which, when dried and smoked, have been found of great use in strengthening the stomach, nerves, and eyes." The ingredients are mixed (after being dried and "cut in an engine as tobacco is cut") in the following proportions:—"Betony, five ounces; coltsfoot three ounces; wild lemon thyme, two ounces; wild rosemary buds, two ounces; lavender flowers, two ounces; eyebright, one ounce; marsh trefoils, one ounce."

Wood betony is best gathered in July and August; it is to be dried on hurdles made of hazle twigs, and in dark apartments with ventilators "to let in the air and not the light." Coltsfoot ("the true European"), in May and June; it is to be "laid on the hurdles leal by leaf, then stripped and picked." Wild lemon thyme, "the best grows on barren hills," is to be "gathered in full bloom." Wild rosemary, "the best from the hills in Northumberland and the banks of the Tweed," is to be cut in April or May. Lavender flowers may be obtained "from the gardeners about London." Eyebright, "the best sort grows on the South Downs in Sussex," is to be nipped in July and

August. Marsh trefoils "grow in low meadows," and are "best gathered after the hay is carried off."

[Printed, 4d. No Drawings.]

A.D. 1773, January 18.—N° 1030.

COLLINS, BENJAMIN.—"A cephalick snuff, being a remedy for "most disorders of the head, which it purges, strengthens the "nerves, and revives the spirits, &c." To compound this snuff, take the best leaf Virginia tobacco, well dry it, and "make it into "snuff of the highest flavor;" add thereto "one-twelfth part of "the finest roseat rappee snuff and a small quantity of the true "macabaw from the West Indies." Dry and make into a fine powder "betony, eyebright, margoram, thyme syriac, flowers of "marum syriac, equal quantities," "one-twentieth part of the "leaves of assari," and East India cloves one-fiftieth part; add "essential oils of cinnamon, nutmegs, lavender, and balsam of "Peru, a small quantity of each." Mix these well together with the snuff, "put the whole into an earthen pan, pressing it very "close together, and after it has stood four days to digest," add thereto "eau de luce, in quantity one ounce to a pound of the "above snuff, together with orange flower, lavender, and rose "water, just sufficient to make the whole a little moist."

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 1 (*second series*), p. 249; Rolls Chapel Reports, 6th Report, p. 138.]

A.D. 1790, January 20.—N° 1723. (* *)

HOOVER, SAMUEL.—The title of this invention is "Manufaturing from leather, leather cuttings, shavings or parings of "every kind of leather whatsoever, and white leather, or leather for "covering the fronts, backs, sides, and tops of coaches, chariotts, "postchaises, sedan chairs, and trunks, and for making band, "hatt, and other boxes, waiters, tea-trays, inkstands, ink potts, "snuff and tobacco boxes, and other things, mouldings, cornices, "ceiling and other ornaments for rooms, and for binding of books; "and with some variation in the process, paper for copperplate "printing, brown, white-brown paper, & for drawing."

In making leather for the above purposes, the shavings, cuttings, or parings are put into an engine, washed and pulped, size added according to texture required, and afterwards moulded as required.

Processes for making paper are also described.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 2, p. 371; Rolls Chapel Reports (*sixth*), p. 182.]

A.D. 1796, July 4.—N^o 2125.

SABATIER, WILLIAM.—“Improved method of retaining cotton, tobacco, hemp, flax, hops, hay, and other articles in nearly the same compass in which they can be compressed by any machinery now in use, or which may be hereafter invented for great compression.”

For each bale of goods there are required (1) four links, by preference of iron, (2) four iron bolts “which go through the eyes of the links,” (3) two boards “exactly alike,” and having “near the edges of the upper sides” small grooves for the reception of the bolts, and (4) “two triangular battens which serve the double purpose to strengthen the boards and to connect them when there are more pieces than one.” The bales are made in a “cubical or oblong” box, opening readily “at that place where the bale or package is to be taken out,” perforated with abundance of air holes, and having fastened to two of its sides strips of wood or iron “which go from the top to the bottom” and “serve to make four grooves in the bale” for the links to lie in. To make a bale, place a board at the bottom of the box, “throw in the article,” lay on the top board, “then press low enough to put on the irons, and two or three inches more, then open the box and put the irons on, let go the press gently, and the bale is finished.”

[Printed, 6d. Drawing. See Repertory of Arts, vol. 8, p. 73.]

A.D. 1798, June 5.—N^o 2240.

POMEROY, GEORGE.—“An apparatus and machinery to be used for various purposes in and for manufacture of tobacco and snuff, and for other uses, used in foreign parts.” The patentee describes a machine for cutting tobacco, the acting portions of which are mounted in a wooden frame dovetailed and bolted together. Two boxes for holding tobacco are so placed between the sides of the frame that a space is left between them for a “horizontal wheel with twelve knives,” and between their outer ends and the standards of the frame room for a female screw with a rim thereon on which teeth are cut making it a ratchet wheel. Into the standards is tenoned a beam through which pass screws; these press on the removeable lids of the tobacco boxes. *The horizontal wheel (which is afterwards described as “two*

"round heads of cast iron" with mortises in their rims to hold twelve knives) is carried by a shaft, on one end of which is a crank handle, and on the other a fly wheel, "on the rim of which must be 12 friction wheels at proper distances." The standards carry also a piece of round timber called "a hand beam," whereon "within two inches" of each standard, "and fastened with such gudgeons as that it will turn at each end of the said hand beam," is a hand which, when the beam is turned, moves one of the ratchets. "At a proper place" in the beam is an iron piece "projecting sufficiently to come in contact with the friction wheels," and on the piece is a spring which goes to the screw beam "and keeps the hand beam in its proper place." Finally in each standard, "and in the very centre of the boxes," is a screw which passes through the female screw and forces forward a piece of iron, thereby pushing the tobacco towards the cutters.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 6th Report, p. 194.]

A.D. 1800, July 1.—N^o 2419.

HARRIS, GEORGE.—"Boxes for snuffs, essences of all kinds, and other purposes." The boxes are made of all sizes and forms, of all metals or compositions of metals, or of any other material; inside is the following mechanism:—A "bed plate, which reaches from side to side of the box, is in part supported by two guiding plates, which are intended to guide the snuff to the center of the bed plate." In this plate are one or more holes "through which the snuff is conveyed into a pipe or tube which goes through the upper part of the box for the convenience of sniffing the snuff through two or more holes, which holes are stopped at pleasure by an outside cap." A sliding plate "admits of the snuff coming through the bed plate," and acts by a spring or springs of any description; on it is a stud which comes through the side or other convenient part of the box and joins a finger plate which is jointed to the outside of the box." Applying the finger to the finger-plate "opens and shuts the communication of the snuffs or essences at pleasure."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 6th Report, p. 149.]

A.D. 1801, November 10.—N^o 2556.

STEVENSON, JOHN.—"New invented process and method of storing and drying tobacco, and the preparation of snuff." To

carry out this invention there are required a back wall, two side walls, and two "end walls which project forward" and have fixed in them slides on which "three pans run with castors." The pans are "similar to drawers;" the upper two are for tobacco, the lower one for snuff. There are two fire-places, one above the other, and each has a horizontal flue which extends the length of the pans, returns, and forms an upright flue which discharges into a general receiver. The upper flue serves "to heat the upper side of the tobacco," and the lower one to heat "the bottom of the tobacco pans and the upper side of the snuff work." "The vacancy betwixt the lower flues is secured by sheet iron to prevent the sour steam of the snuff work communicating with the tobacco part of the stove." The heat is regulated by dampers "at the middle ends" of the horizontal flues, and by others in the upright flues. "If it be wished to let out or retain the steam upon the tobacco, it may be done by the assistance of a cord or wire to open or shut" a steam damper fixed in a square pipe which is built in the back wall; the snuff pan has a similar pipe and damper for the like purpose; and both pipes discharge into the receiver. The breadth of the pans is such that when they are shut a vacancy is left at the back "for the tobacco and snuff work steam" to pass up the square pipes. In the upper part is "a space to receive the heat of the higher part of the upper flues, which again falls on the tobacco pans," and immediately over the space is a plate of sheet iron lying upon bars, "on which a layer of sand is spread for reflecting the heat and bedding the flags with which the stove is covered in and finished." The upper and lower flues, the upright flues, the general receiver, and the pans are all made of strong sheet iron.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 1 (*second series*), p. 1.]

A.D. 1803, June 21.—N^o 2716. (* *)

BROWN, THOMAS.—"A machine for the cutting of tobacco, tallow for tallow chandlers and soap boilers, and also for the cutting of turnips, cabbages, carrots, and other kind of roots for the feeding of cattle." This consists of a crank with a fly wheel; to the crank are attached jointed working rods, to the lower part of which the cutter is attached; a trough or box to contain the material to be cut or bruised is made to slide between the framework below the cutter, and by an arrangement of bevelled

wheels and shafts proceeding from the crank and leading under the trough or box, a tooth in the under shaft works in a rack on the bottom of the trough and moves the box until one end comes close to the knife; "by reversing the motion of the crank it will be driven back again, until the matter is sufficiently cut or bruised."

[Printed, 2d. Drawing. Repertory of Arts, vol. 3 (second series), p. 405.]

A.D. 1811, April 24.—N^o 3435.

STOCKWELL, JOHN.—"Improvements in the art or method of manufacturing shag tobacco, whereby the stalks taken out of the leaf tobacco may be cut up into shag tobacco without injuring the quality thereof." Two or three pounds of tobacco stalks are tied up into a bundle, and if the stalks are long, a portion of the thin end (about six inches) is cut off; they are soaked in a liquor made for the purpose during twenty-four hours, "so as to bring them as near as possible to the color of shag tobacco." They are then flattened between a pair of rollers, each provided with a scraper to take off the stalks as they pass through, "after which they are laid as straight as possible (with the tobacco) in cutting boxes, "taking care to mix the stalks so flattened very regular in with the leaf in the middle of the box, and laid so that the knife shall cut them the long way of the stalk." The ordinary proportion is about one pound of flattened stalk to four or five pounds of leaf. The liquor is made by boiling 30 lbs. of campeachy logwood and 7 lbs. of bruised blue galls in 90 gallons of soft water for one hour and a half, then adding thereto 7 lbs. of green copperas and 4 lbs. of alum, and boiling for 20 minutes more. The smell of the tobacco, if "bad flavored," may be improved "by infusing any aromatic in this liquor."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 83.]

A.D. 1817, March 18.—N^o 4111.

WINTER, JOHN, the younger.—"A method of joining and combining horn and tortoiseshell together by means of heat and pressure, thereby causing the same to adhere one to the other in such manner as to have the appearance of solid tortoiseshell, and with all the strength and elasticity of horn." The patentee applies his invention to the manufacture of snuff boxes

as well as other articles. He first flattens the horn by "the usual process of pressing;" he then works such "as is perfectly clear and transparent" into the shape of the article which he intends to make, and forms therein grooves "of the size, thickness, and shape of the tortoiseshell" that he proposes to inlay on it. He next works a piece of tortoiseshell "to the size of the whole or that part of the horn so shaped" which is to be covered, and boils both, until perfectly soft, in water into which he has put a handful of salt "and about a quarter of a pint of oil or grease." After cleaning off the oil or grease he applies the tortoiseshell to the grooves, warms the whole, presses it in moulds made to the size and shape of the required article, allows it to remain in the moulds until it is perfectly cold, and finishes it "in the usual way in which horn and tortoiseshell are manufactured."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 8th Report, p. 117.]

A.D. 1821, March 3.—N^o 4540. (* *)

COOPER, ROBERT BURTON.—"Certain improvements on, or a substitute for stoppers, covers, or lids, such as are used for bottles, tobacco and snuff boxes, inkholders, and various other articles requiring stoppers, covers, or lids."

The invention is described at length in its application to an inkholder. The lid is made of "three parallel plates which slide round upon a common centre pin or pivot, the upper and lower plates being so connected by means of squares upon the centre pins as to move together while the middle plate remains stationary." Through these three plates corresponding and coinciding apertures are made for the purpose "of gaining access to the interior of the bottle or other vessel, which access becomes closed, and the interior of the vessel secured air and water-tight by the two moveable plates sliding round horizontally." This horizontal motion is produced by means of two knobs on the top plate, from the under side of which a small pin projects and works in a groove on the upper side of the middle plate "by way of stop." The under side of the middle plate "has a groove all round, with a female screw in its rim for the purpose of attaching the middle plate to a rim with a male screw on the neck of the bottle." The under plate has "both sides alike coated with tin or lead to prevent corrosion." "The surfaces of the three plates which come in contact are ground or otherwise made

"flat," so as to produce an air-tight stopper. The patentee claims the right of slightly deviating from "this precise form or construction," so long as he adheres to the principle of his invention. "For snuff and tobacco boxes the apertures must be sufficiently large to admit the thumb and finger."

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 2, p. 338.; Register of Arts and Sciences, vol. 1 (*new series*), p. 247.]

A.D. 1826, May 23.—N° 5363. (* *)

DUNN, DANIEL.—"An improvement or improvements upon the screw press used in the pressing of paper, books, tobacco, or bale goods, and in the expressing of oil, extracts, or tinctures, and for various other purposes in which great pressure is required." This consists "in the application of a ratchet wheel to the main screw of the press, and of a lever acting with various degrees of power, and communicating that power to the wheel by means of a connecting link or hook pulling, or by a thrusting piece pushing in or upon the ratchets of the said wheel."

[Printed, 6d. Drawing. Repertory of Arts, vol. 3 (*third series*), p. 337; London Journal (*Newton's*), vol. 12, p. 298; Register of Arts and Sciences, vol. 4, p. 371; Engineers and Mechanics' Encyclopedia, vol. 2, p. 330.]

A.D. 1827, August 21.—N° 5544.

WRIGHT, LEMUEL WELLMAN.—"Improvements in machinery for cutting tobacco." The machine is mounted on standards. The main shaft works in plummer blocks; it carries at one end a drum driven by a strap, and at the other a wheel constructed to serve as both a fly wheel and a cutter wheel. The spokes are shaped to receive the knives which are attached by plates and screws to hinge-joints, and are kept in position and regulated by set screws. At the opposite end of the shaft is "a small grooved rigger," which is connected by a cross gut band to a larger grooved rigger; the latter is fitted to turn on the shaft of a feeding screw by a clutch in the collar of the shaft and in the boss of the rigger. The screw works through a nut connected to guide rods, whose opposite ends are screwed to a follower. The cutting box being supplied, and the contents being pressed by a board and screw, and the machine being set in motion, the feeding screw turning out of the nut "sends up the follower with greater or less velocity as the motion is regulated by the band on the

"riggers." When the box requires replenishing, the clutch is thrown out by sliding back a rod, "the bent end of which works "in a groove in the clutch," and a weight, attached by a cord to a winch on the outer end of the screw shaft, having been previously wound up by the action of the machine, will now run the screw in a contrary direction and bring the follower to the back of the cutting box.

[Printed, *8d.* Drawing. See London Journal (*Newton's*), vol. 5 (*second series*), p. 217; Register of Arts and Sciences, vol. 3 (*new series*), p. 2; Engineers and Mechanics' Encyclopedia, vol. 2, p. 799.]

A.D. 1834, July 10.—N^o 6642.

WRIGHT, LEMUEL WELLMAN.—"Improvements in machinery "for cutting tobacco, and which machinery may be applicable to "other useful purposes." The object of this invention is to cut the leaves of tobacco "without previously pressing them into "cakes;" it may be effected in various ways, three of which are described. 1. The principal parts of the machine are, (1) a long trough with bottom plates of iron or other substantial material, in which the leaves "are spread out lengthwise;" (2) a pair of parallel rollers over which an endless band is passed, carrying the tobacco forward; (3) two large rollers and two smaller ones "mounted on axles turning in bearings in the side plates of the "trough;" the larger ones are connected by toothed wheels on their axles; an endless band "is tightly distended" over each larger and a smaller roller, and one pair "forms the pressing "apparatus;" (4) a piece fastened into the front of the trough "for the purpose of confining and conducting the compressed "layers of tobacco leaf to the revolving cutters;" (5) a vertical wheel, carrying cutters (which are flat blades), mounted on a lateral shaft and driven by a winch or by other means; (6) a cam wheel fixed "at the reverse end of the shaft," and having "as "many raised parts as there are knives on the cutting wheel, and "corresponding therewith;" (7) a lever click, spring, and ratchet wheel, acted on by the cam; (8) a screw shaft (having the ratchet fixed at one end of it) whose screw "takes into the teeth cut in "the concave periphery" of a wheel on the axle of the pressing roller; (9) a wheel, "mounted in a bearing with adjustment," whose edge presses against the back of the cutter wheel "to "keep the cutters pressing steadily up to the front of the "trough;" (10) a cylindrical roller of wood or other material

covered with cloth, "mounted on a vertical shaft at the under-part of the machine," and made to revolve by means of a toothed wheel and pinion; it "acts as a wiper to remove the juicy matter which exudes from the tobacco and adheres to the knife."

2. The feeding apparatus is the same, but the knives are "mounted upon the peripheries of two wheels and revolving in front of the machine." The driving power is applied by a winch or rigger to a transverse shaft, at the other end of which is a toothed wheel taking into a corresponding wheel on a lateral shaft. The cam is fixed "at the reverse end of this lateral shaft." The cleaning roller "is placed upon a horizontal axle mounted in bearings behind the cutter wheels," and "is driven by a small pulley on the axle of the cleaning roller and a band passed over a larger pulley" on the transverse shaft.

3. Only one knife is required; it is secured to a lever "which works up and down vertically upon a fulcrum pin," and is guided by a bracket piece. The action of the lever is produced by the rotation of a crank fixed on the shaft which carries the fly wheel, and a rod connects the crank to the lever. The cam is affixed "at the reverse end of the crank shaft."

The patentee proposes another method for feeding:—The tobacco leaf is to be laid in a trough furnished with a top board, which is to be forced down by screws; and it can then "be conducted forward to the knives by a follower forced up by a screw, which may be worked in the usual way."

[Printed, 10d. Drawing. See London Journal (*Newton's*), vol. 6 (*continued series*), p. 121; Rolls Chapel Reports, 7th Report, p. 153.]

A.D. 1838, August 10.—N° 7767.

HEATH, MATTHEW.—(*A communication*).—"Improvements in preparing tobacco and in making snuff."

[No Specification enrolled.]

A.D. 1840, September 3.—N° 8616.

BINGHAM, JAMES. — "Compositions which are made to resemble ivory, bone, mother of pearl, and other substances, applicable to the manufacture of handles of knives, forks and razors, pianoforte keys, snuff boxes, and various other articles."

[No Specification enrolled.]

A.D. 1845, October 9.—N° 10,864.

HOLLINGSWORTH, THOMAS.—“Improvements in the construction of cases for holding cigars.” A diaphragm of india-rubber or other elastic material is stretched over an elliptical ring, and held there by a similar ring; it is then introduced into the bottom of the inner part of the cigar case, or into the top of the outer part, and fastened in any convenient manner. By this contrivance the cigars are “prevented from shaking or moving” when the outer part of the case is drawn over the inner part. There may be a diaphragm in each part. “Any elastic or yielding padding or stuffing,” or “an inelastic material” supported on a spring, may be substituted for the diaphragm.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 28 (*conjoined series*), p. 262.]

A.D. 1846, February 17.—N° 11,094.

ADORNO, JUAN NEPOMUCENO.—“Improvements in manufacturing cigars and other similar articles.”

[No Specification enrolled.]

A.D. 1846, March 25.—No. 11,149.

SMITH, CHARLES.—“Improvements in cooking and culinary utensils, and methods of heating and suspending or fastening articles of domestic use, and similar purposes.” The patentee divides his numerous inventions into eleven heads, and under the ninth head (plan No. 3, division 9, in the drawings) we are informed that he makes:—

1. Walking sticks, whips, and umbrellas, with “compartments formed therein for containing hot or cold liquids, or solid or comminuted or other suitable matter, for keeping the hands warm in cold weather, or containing cigars, or match or snuff box, and looking-glass, &c., or any two of such like or other suitable conveniences.” . . . These compartments are made in the handle, which is a separate piece of any suitable material, and is screwed on to the lower part of the article. The handle is surmounted by a screw cover which contains the looking-glass.

2. Cigar cases with “a snuff or match box,” with “a rough friction surface,” and with a looking-glass which is covered by a slide. “Any two of those or other convenient articles” can be formed in the cases.

3. Cigar trays. These are composed of (1) "a vessel for containing the splints or lights, or a snuff box," (2) a vessel for matches, (3) a rough surface for friction, (4) a handle for removing a drawer in the lower part.

4. Sandwich boxes. These are made with a recess for matches provided with a cover whereon is "a rough friction surface," and a recess for cigars with a cover on which is fixed a looking-glass. In the cover is a space for holding liquid, with a "cork-hole for filling," or a "mouth-piece for drinking."

The cases, trays, and boxes, are made "of any suitable materials in the usual way."

[Printed, 8s. 6d. Drawings. See London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 356.]

A.D. 1847, February 24.—N^o 11,593.

ADORNO, JUAN NEPOMUCENO.—"Improvements in manufacturing cigars and other similar articles," namely cigarettes. Both are made mainly by machinery; and for the manufacture of cigars there is employed, first, a machine for cutting the inside and outside leaves:—The standards are of iron; the punch or cutter is worked by a treadle and "will cut one or more leaves" at each stroke, according to the form of leaf which may "be required." Secondly, a machine for making the cigar:—At each extremity of a frame are two toothed wheels "fixed to the sides," and two inner wheels "secured to their axle and revolving therewith." To the inner wheels "are fixed narrow cylinders or rollers" with pinions "for actuating them in gear" with the outer wheels. An attendant places between the rollers a number of leaves sufficient to form the inside of the cigar; these are carried around the inside of a "curved surface" and are rolled up into a cylindrical form "by the rotary motion of the rollers therein." When the roll thus formed "arrives at the outlet of the curved surface," it is conveyed by straps to the other extremity, where another attendant "covers it on the outside with a leaf" and places it in the similar apparatus. Here it is again rolled round in contact with a curved surface, "which tightens the covering and completes the form of the cylindrical cigar;" after this it passes between straps for the purpose of being smoothed and perfected. The cigar now "only requires to be cut at the ends by means of a suitable cutting apparatus, and adjusted to the length and weight required." To make *Manilla*

cigars conical rollers are substituted for the cylindrical ones, and the rollers on which the straps work must be conical. Havannah cigars can be made on the same machine "by giving to the straps and rollers the required form."

"But the principal manner of making the latter kind of cigars, and also the former, is by employing an apparatus somewhat similar to a lathe with suitable chucks." The chuck is filled with leaves, rotary motion is given by means of a treadle, and a roll is formed; this is forced out of the chuck by a lever "which works the slide inside the chuck;" it is then covered with an outside leaf, "presented to the chuck again," and enveloped in the leaf by rotary motion. "The end of the cigar is then formed by the application of the fingers, and it is afterwards rounded and polished" by means of a concave die.

In a machine worked by hand "the extremity of the axle" is made to open by a spring joint and is kept closed by a sliding ring. The workman places inside it "the extremities of the requisite number of leaves;" he then closes it, "gives by the left hand the rotary motion to the axle, and by the right hand places the leaves" in a chuck, thereby giving to the cigar the required form; "he then applies the outer leaf, and by the same motion completes the form of the cigar," after which he polishes and finishes it by the application of an "upper chuck." For very small and thin cigars a chuck is used consisting "of a single wire moved by the axle of the machine and another wire held by the right hand of the operative."

In the manufacture of cigarettes three machines are employed; one "for cutting the endless paper in bands of the requisite width," and for "engraving on or embossing those bands;" one for cutting, sifting, and cleaning the tobacco; and one for moulding the paper, filling it with tobacco, pressing it, separating and folding each cigarette, closing the ends, and making into packages. The first consists of two cylinders; the upper is hollow so that a hot iron may be placed therein for the purpose of drying the paper; it is engraved with a pattern; the lower is of larger diameter and is enveloped by a thick composition of paper so as to present a yielding bed to the paper which is to be passed between them. The paper afterwards "passes over the edges of several knives which are mounted in a frame at suitable distances apart." For cutting tobacco the ordinary machine may be used, also a cylinder armed with blades "somewhat upon the principle of the machine

"commonly known by the name of devil." The machine for sifting consists "of cylindrical sieves supported by a close frame with doors." The sieves are of woven wire, and in the middle of each is a round iron weight which causes the cut tobacco to pass through "and the extraneous matters to pass out at the end." These two machines are worked by manual labour. The tobacco is then placed in a hopper, in which is a wheel, "actuated by suitable gearing" and "intended to agitate the tobacco and cause it to fall down through an opening" on to a "travelling chain" in the third machine. In the hopper is a bell "mounted above the wheel" in such a manner that, when all the tobacco in the hopper has passed into the machine, it falls on the wheel and gives notice to the attendant. At the lower part of the hopper is an opening regulated by means of a sliding door which is moved by rack and pinion; and the inclined plane down which the tobacco descends "is agitated by the motion of cams."

The principal parts and operation of the third machine are as follows:—Underneath at one end is a roller carrying "long narrow bands of paper." The paper passes from the roller on to a travelling chain where it is corrugated by a small press. The chain is composed of a series of links, in each of which is a groove "furnished with a square bar of steel which projects a quarter of an inch on each side beyond the link and has an upward and downward motion communicated to it for the purpose of forcing or lifting the cigarette out of the groove." The chain in advancing rests on two railways which have inclined planes near their outer ends "for the purpose of lifting the steel bars." The corrugated paper receives the tobacco from the hopper, and passes under a horizontal plate "which regulates the quantity." The tobacco after a slight pressing and levelling from a roller, is forced into the corrugated paper by a press furnished with "graduated bars" and "pistons;" it is then subjected to the action of a brush and a knife "which cuts off from the length of paper the quantity required for each cigarette." A plunger now "forces the tobacco further into the groove for the purpose of turning up the edges of the paper," and a folder bends one side of the paper over the tobacco, while the other side is bent by passing under a plate. The cigarettes are now transferred by means of the inclined planes to an "upper travelling chain" similar in construction to the lower one and in its motion presenting its grooves immediately opposite, so that each cigarette "in the action of transfer

" becomes perfectly enveloped by the paper." A small apparatus, placed on each side of the chain and "composed of three horizontal " wheels," forms and closes the ends. The cigarettes are forced out of the grooves of the upper chain and transferred to a platform which conducts them to a packing chain by the aid of a "vibrating slide." The packing chain consists "of long links with " grooves," the capacity of which must be "as large as necessary " for the number of cigarettes required for each package," and when they are in the grooves, they are pressed by a press worked by the foot of the workman. The bands of paper for making the wrappers have been previously moved up from a roller at this end of the machine to receive the cigarettes; they are cut with a knife, thereby separating one package from another, the ends are folded over and secured at each end by means of any adhesive substance. " When the package has arrived at the end of the chain, it falls " out of the groove and is deposited in the box below."

Details are given of the connection of the various parts, of the motions of many, and of modifications which "may be made in " the arrangement and construction."

[Printed, 1s. 8d. Drawings.]

A.D. 1847, April 1.—N^o 11,647.

PARKER, WILLIAM PHILLIPS.—(*A communication*).—"An improved mode of manufacturing cigars."

[No Specification enrolled.]

A.D. 1847, July 28.—N^o 11,816.

CEAL, ALFRED, and BEAR, HENRY.—"Improvements in the " manufacture of tobacco," namely, in "so compressing the stalk " with the leaf that both may be manufactured together and used " for all purposes that the stript leaves have been or may be " used for." The machine employed for such purpose consists of (1) two rollers mounted on shafts or axles which are coupled "together by toothed wheels;" (2) two scrapers "pressing lightly " against the rollers;" and (3) two pressure screws "bearing upon " the shaft or axle of the upper roller;" it may be "driven by any " convenient power." The leaf, damped and opened in the ordinary manner, is passed "in the direction of the stalk " between the rollers.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 11 (*enlarged series*), p. 147; London Journal (*Newton's*), vol. 32 (*conjoined series*), p. 118; Patent Journal vol. 4, p. 293.]

A.D. 1847, July 29.—N^o 11,826.

PARKER, WILLIAM PHILLIPS.—(*A communication.*)—"An improved mode of manufacturing cigars." Both the filling and the covering are completed by machinery of which the following is a description:—Two large horizontal pulleys are supported "on the upper end of vertical shafts," one at each end of a table. Two bands are put on the pulleys, one over the other; the outer one passes round outside two small rollers "at the front side of the table," a sufficient space being thus formed between the bands "to receive the filling." On the outside of each band is a straight piece of wood or metal attached to the table "for the purpose of support to the bands," and another band "is made to run on a level with the lower edge of the former ones, thus forming a trough into which the filling is put." This band is supported by two small pulleys attached to the table (over which it passes), whence it runs round a large pulley on a horizontal shaft; "by this means the fillers can be put in and carried forward." Near the further end of the table a frame is erected, in which "an oblong piece of wood" or follower (as long as the cigar to be made) slides up and down between belts (carried by a shaft) and beyond the last-mentioned band, "where a hole is cut through the table for the purpose of allowing the filler to descend into the apparatus where it is to be covered." The filler is cut off by a V-shaped tool to the proper length "before it is borne down;" the cutter slides in the same frame as the follower; it precedes it in its downward motion, but does not descend so far. An apron "is attached to the permanent frame by one end, just behind the follower;" it is thence carried forward and secured to a roller (round which it is wound with one or two turns) fixed on a projecting portion of the frame. "This part of the apparatus is the most important improvement in the machine." The middle of the apron is made of a smooth pliable substance, and the side edges "are composed of an elastic medium;" it is kept wound on to the roller with sufficient tension by means of pulleys, cord, and weight, and "is slackened up" by another cord which passes round the pulleys the reverse way and thence to a treadle. This treadle is connected by a rod with an arm on the shaft which moves the cutter and follower. Another treadle gives motion by aid of rollers and strap to an upper and lower slide, and when it is pressed down, "the

"filler is rolled forward in the bight of the apron" on the lower slide, "a wrapper being placed on the apron in front, which by the action of the apron is drawn into the bight and wound round the filler." This process is continued on to the end of the slide, "where the bight is relieved," and the cigar is thrown out. Full explanation of the connection of the various parts, of the use of the elastic edge of the apron, and of the method of working the machine is given; also a modification of certain portions.

An improved wrapper consists of "a kind of tobacco paper;" it is made of tobacco and "the usual fibrous matter used for paper, the proportions being six parts of tobacco to one of the fibrous matter."

[Printed, 10d. Drawing.]

A.D. 1847, October 14.—N^o 11,904.

LLOYD, FRANCIS.—"Improvements in the preparation and manufacture of tobacco," namely, the heating and partial opening of cut or shag tobacco, the steaming of leaf tobacco in its imported state, and the damping of leaf tobacco. Two machines are described, in either of which the first two improvements may be effected; the first only (and that modified) is applicable to the damping. The one is composed of (1) an oblong box mounted on a standard, formed at top, bottom, and sides of two plates so as to leave a continuous open space all round, except at the ends, and having removable end covers secured by slotted studs and keys. The right end cover "terminates at about four inches below the top of the box," leaving an aperture for the introduction of the tobacco. Within is a false bottom, narrower than the hollow bottom by about an inch and a half on each side. (2) two steam pipes, one leading into the open space, the other into the interior of the box; the portion of the pipe in the interior extends from end to end in the space between the hollow and false bottoms, and is perforated at the sides with small holes. (3) syphon tubes to carry off condensed steam from the open space, a waste pipe to carry off such "as collects on the top of the hollow bottom" (which is shaped suitably for the purpose), and a vent pipe to allow the air to escape from the hollow space when steam is admitted. (4) three sets of rollers; a top set of five, "all in one horizontal plane, two of which are mounted inside of the box, two outside of it, and one on a line with the

"right end;" a middle set of three mounted within the box, and a lower set of three also within the box. The rollers are carried by peculiarly formed bearing bars (which are described); each set "is encompassed by an endless web," and is so placed "in vertical relation" to another, that when a layer of tobacco placed on the top web reaches the farther end thereof, it drops on to the second, and being carried forward to its delivery end drops on to the third, "which carries it to the discharge shoot" of the machine. Each web is kept at a proper degree of tension by a weight. "The end roller of each set is made of cast iron and slightly cambered, but the middle ones are made of brass and straight." (5) three pulleys of different diameters; the largest is attached "to one end of the axis of the outermost of the first set of rollers," the next in size "to the same side end of the axis of the innermost of the second set," and the smallest (a double pulley) "is fixed on the corresponding end of the axis of the outermost of the third set." The pulleys are connected by bands, and motion is imparted "by any suitable prime mover." (6) guides "affixed in angular positions" to the sides and ends of the box to guide the tobacco in its fall from one web to another,

The other machine consists of a double-sided steam cylinder and appendages, all carried by a framework. Two end covers are inserted, one fixed, the other removable. A cross is screwed on to the fixed cover, and in the middle of the cross is a stuffing box which "encircles (but so as to rotate freely on) a fixed steam supply pipe" on the outside. The stuffing box rests upon three friction rollers at the left end of the framework, and serves as a bearing axis to the cylinder. A broad hoop is passed over the right end of the cylinder and screwed to it; from the edges project slotted studs, through which keys are inserted and hold fast the removable cover. The hoop rests on three friction rollers at the right end of the framework, and serves as an axis to the cylinder at that end. The steam pipe terminates in a chamber, "which is an enlarged prolongation of the stuffing box," and from the chamber proceed two pipes, the one to convey steam into the hollow sides, the other into the interior of the cylinder; pipes are provided for the escape of air and condensed steam, and valves to prevent an overcharge of steam and to admit air when the steam is shut off. The cylinder is divided in the inside into four compartments by "peculiarly shaped and placed partitions," each

compartment "opening into an open space in the centre common "to the whole."

Hot air may be used in either machine instead of steam, and either may be used "without the introduction into the "interior of either steam or hot air." The patentee describes the method of operating with each machine, adding that he does not limit himself to any particular number of sets of rollers or of compartments, nor to any especial shape of partition.

[Printed, 1s. 6d. Drawings. See *Mechanics' Magazine*, vol. 41, p. 409.]

A.D. 1848, June 30.—N^o 12,197.

SKERTCHLY, JOSEPH.—"Improvements in bricks, and in the "manufacture of tobacco pipes and other like articles." In pipe making five processes are described, namely, "preparing the clay, "forming the roll, boring the roll, wiring the roll, and firing the "pipes."

1. The clay after being soaked in the usual manner is reduced "to one uniform degree of consistency" by being passed through a machine in which are two rollers, one revolving three times whilst the other revolves once. The latter roller is "flanged on "the rim to prevent the clay working out at the sides," and the distance between the rollers is regulated by a set screw. The machine is fully described in the Specification.

2. This is done either by compressing the clay between suitably formed "plates, dies, or moulds," or by forcing it through one of the following machines." The principal parts of one are (1) a bed, (2) a vessel, (3) plates, fixed to the outer end of the vessel, "perforated according to the thicknesses of the stem required," "divided through the centre of the perforations in order that "they may open successively to admit various thicknesses of clay "for the stem, and a sufficient substance at the end of the stem "for forming the bowl, and provided with springs that close the "perforations after each operation," (4) a plunger "which fits the "cavity of the vessel," (5) bars (for opening the plates) "screwed "to the guide pins" of the plunger. A quantity of clay being laid on the bed, the plunger is pushed forward by suitable gearing and forces the clay into the vessel. As soon as the clay "begins "to emerge from the apertures," the bars, advancing between rollers on either side of the machine, open the plates "gradually "and equally," both "upwards and downwards," until "the "*stem has acquired its full length,*" when the shoulders of the

bars "come suddenly into contact with the rollers, and open the plates wide enough to allow the substance for the bowl to escape."

Instead of dividing the plates through the centres of the apertures, "dies or bushes may be fitted into the large opening for the bowl end of the roll, and arranged so as to expand when required."

The other machine is composed principally of one or more cylinders (for holding the clay), plates similarly perforated, &c. to those before mentioned, one or more pistons worked by screw and wheels, and opening bars as before.

Or the clay may be laid on an endless cloth and passed thence between rollers "having suitable indentations or matrices on their surfaces."

3. A rod "extends from side to side of the vessel;" wires are inserted into the rod, each of which "is exactly opposite some one of the apertures of the plates," and "extends some little distance through the exact centre." The clay in being forced out "must pass over the wires."

4. A frame is cut with as many grooves as there are rolls to be produced at once from the machine. In each groove is placed a wire, and in each is a slide or runner, through which the wire passes freely, and by which the wire is kept opposite the wire or mandril of the machine. The frame is placed at the end of the machine, "when the points of the wires come in contact, or nearly so, with the ends of the wires or mandrils," and "when the rolls begin to pass over the mandrils they are received upon the wires of the frame," the runners receding as the rolls advance up the wires. "These wires will act precisely the same if the roll be produced from the machine solid."

Or the rolls may be put into moulds in which guides are fixed, and the wires fit the guides so accurately that they are kept in their proper course up the rolls.

5. When the pipes are ready for firing, they are placed upon earthenware frames, which with the pipes upon them are put into the kiln. The frames are each "of the form of a segment of a circle," and they are made "of various sizes so as to fit the various circles or ledges in the kiln."

[Printed, 1s. 2d. Drawings. See *Mechanics' Magazine*, vol. 50, p. 20; *Artizan*, vol. 7, p. 131; *Patent Journal*, vol. 6, p. 136; *Engineers and Architects' Journal*, vol. 12, p. 55; *Practical Mechanics' Journal*, vol. 1, p. 254.]

A.D. 1848, July 6.—N^o 12,202.

STEEL, ENOCH, and BRITTER, WILLIAM.—“Improvements
“in the manufacture of tobacco pipes,” whereby the stem and
bowl are produced at one operation. The clay, when reduced to
the proper consistency, is placed in a cylinder furnished with a
perforated bottom, and is forced through the holes by a piston,
thereby forming rolls “of the same diameter as the external
“diameter of the pipe bowl.” The rolls may be made by other
means, and they are cut into lengths, each containing sufficient
clay for a pipe. The mould is made in two parts, which are
held together “by four steady pins;” the interior is “bored out
“the diameter of the pipe bowl;” an opening “is carried through
“the front at a suitable angle to produce the stem,” and through
a hole at the back a pin (with a button head) is introduced, which
is held sufficiently tight between the two parts of the mould to
maintain its position in the opening, whence “it is continued in
“the shape of a long wire” in order to support the stem. The
plunger is shaped so that its lower end forms the interior of the
bowl; up the middle is an air passage fitted with a valve, and to
the bottom of the valve is affixed a small wire which enters a hole
in the pin, “this forming the communication between the bowl
“and the hole or bore of the stem.” The plunger is attached
by links to a hand lever, whose fulcrum is the top of a standard
erected on a base, and it passes through a guide “which maintains
“its parallelism in a line perpendicular to the base;” a feather
let into its side prevents “its turning round in the guide.” A
chase filled with charged moulds (each mould fitting a separate
cell, or “made flush on the sides, and the whole placed in close
“contact”), is slid on to the base between two guide ribs. To
prevent any escape of clay at the top of the mould during the
downward pressure of the plunger, a sliding tube (with a collar
on the top to prevent its descending too low into the mould) is
attached to the plunger; it fits the interior accurately, and enters
it before the lower end of the plunger comes into contact with the
clay. The pressure being continued, the whole of the clay not
required for the formation of the bowl is forced out at the opening
and forms a stem round the wire. The attachments for the with-
drawal of the sliding tube are described, as well as the shape of
the mould and the required appendages when a spur is to be
added to the pipe; likewise an addition for varying the size of

the stems. In the better sorts of pipes the stems are subjected to pressure in dies, consisting of two plates with grooves on their edges, which when together form a hole corresponding with the shape to be imparted to the stem. The stem is laid on the under plate, the upper one is forced down between guides, the stem is compressed to the shape of the hole, and the superfluous clay is cut off by the sharp edges. The pin and wire are now withdrawn, the hole in the back part of the bowl is squeezed or plugged up, and the pipe is ready for firing. A suitable curve is given to the stem by the die, or it may be imparted by hand.

A mould, constructed as before, may be surmounted by a hollow cylinder, "which fits into a recess in the upper part." This cylinder (which may be removed after each operation) is charged with clay "stamped therewith from a sheet of that material," and is placed on the mould. The plunger, which in this case is made with a collar above and terminates in a point below, is brought down and expels the surplussage at the opening below, thereby producing the pipe stem. The point should be long enough to pass out at the opening "before any clay is expelled, in order to insure a perfect bore." In the plunger there is a groove above the collar "for the introduction of packing if required."

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 50, p. 46; *Practical Mechanics' Journal*, vol. 1, p. 276; *Artizan*, vol. 7, p. 183; *Patent Journal*, vol. 6, p. 166.]

A.D. 1849, November 17.—N^o 12,852.

STOCKER, SAMUEL.—"Improvements in the beer engines, beer measures, and tobacco boxes, used by publicans." A tobacco box of the following construction obliges a person "to deposit in the box the requisite sum of money before he can help himself to tobacco, and then only to an allotted quantity." Inside a case, under lock and key, is a revolving tobacco holder having in it a number of equidistant recesses for the reception each of a certain quantity of tobacco. The holder moves in one direction upon a pin, and attached to its back is an escapement composed of a larger and a smaller wheel, each with as many teeth as there are recesses. A lever, turning upon a pin, carries a detent "which is constantly in gear with one or other of the wheels. When the apparatus is at rest, the detent is pressed by a spring "into the interstice between two teeth of the larger wheel" and retains

the holder "immoveably with one of the recesses" immediately opposite the delivery door of the case. "A double vibration of the lever, that is a downward and an upward stroke," causes the holder "to turn upon its axis through the space of one tooth," bringing forward the next recess to the aperture.

Within the case is a "money channel," open at top and "partially closed at bottom by the tail of the lever," and in a slot in the side of the channel moves a rod, "connected at top to a "tappet" and moveable by a stud that works in a slot at the back of the case. The tappet when not in action is kept at the upper part of the channel by the action of a spring upon the rod.

A coin being dropped into the channel "is arrested in its descent by the tail of the detent lever," but the tappet being drawn down will depress the lever until "the space between the tail of the lever and the corner of the channel" is sufficient to allow the coin to pass into a box below. During the descent of the lever, the detent acting upon the smaller wheel has moved the holder "about half a tooth," and on the ascent of the lever, the detent acting upon the larger wheel "completes the motion."

[Printed, 10d. Drawings. See *Mechanics' Magazine*, vol. 52, p. 417; *Patent Journal*, vol. 9, p. 199.]

A.D. 1850, March 4.—No 12,987.

STAITE, WILLIAM EDWARDS.—"Improvements in pipes for smoking and in apparatus connected therewith." The improvements in the pipe, which it is proposed to call "the patent diaphragm pipe," are (1) constructing the bowl so as to prevent the oil from passing up the tube, (2) additions to the pipe stem, and (3) a tobacco stopper.

1. The bowl terminates in a tube which descends nearly to the bottom of a removable cup; a perforated diaphragm is "fitted to or cast on the outside of the tube;" and the socket into which the stem is inserted "is in all cases above the diaphragm," "so that the smoke descends through the tube and passes through the diaphragm before it enters the stem, leaving the oil in the cup. Or the bowl may be made with a hole communicating with a chamber beneath, in which is "a solid division or partition pointed at bottom" to facilitate the dropping of the oil into the cup. The partition "may be placed perpendicularly down the centre or inclined at any angle;" and attached to it at bottom is a perforated diaphragm. There may

be more than one diaphragm, and one may be introduced into the socket.

2. The stem is made in two parts; these are united by a tube, which is provided with "a solid division or partition fitted into a cylinder and carries a perforated diaphragm attached thereto." A removable cup fits on to the cylinder. Or the middle of the connecting tube forms "a hollow projecting piece, to the inside of which are fitted three stops;" the piece is made in two portions screwed one on to the other. A valve opening upwards rests on the lower two stops, and a pin, "which passes through the side of the projecting piece and terminates inwardly in a slide," presses the slide over the aperture between the upper two stops "and is prevented from rising" by a spring. A helical spring tends to keep the pin out.

3. "It may be made to fit on easily," or "may be permanently fitted with a hinge joint" to the bowl; it is arched, and a stopper of any material is fixed to one end of a pin which passes upwards through the arch while a helical or other spring keeps it up when out of use.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 40 (*conjoined series*), p. 455; *Mechanics' Magazine*, vol. 53, pp. 199, 209; *Patent Journal*, vol. 9, pp. 194, 271.]

A.D. 1850, July 31.—N^o 13,203.

ADORNO, JUAN NEPOMUCENO.—"Improvements in manufacturing cigars and other similar articles." There is described, first, a machine actuated by hand "for making cigars in the Havannah form":—Iron standards are erected on a wooden case, and to the upper part of one a block is hinged so that "it may be turned back on its pivot." Six fluted steel rollers are mounted, four in the standard and two in the block; the right extremity of each of the four terminates in a conical end and is supported in a socket in a bracket; the conical portions are united to the straight ones "by universal hinges." The left extremities of the six project on the left side of the standard and block; being fluted they "act as pinions," and between them is a larger pinion, which, when set in motion by a handle, causes them to "rotate on their axes in the same direction." The block is secured to its standard by a lock, which is worked by a handle so arranged that, when it unfastens the lock, it "at the same time opens the door of a hopper placed above." Leaf tobacco "is

“ placed in the space between the four lower rollers, and the leaf “ to form the outside or wrapper is placed obliquely.” When the internal part is rolled and enveloped, the extraneous part of the wrapper is cut off, paste or gum water is applied under the edge, the handle is again turned twice or thrice, and the pointed end is finished. Cheroots or Mexican cigars or cigarettes may be made in a machine similar to the above except that the extremities of the rollers are straight; the shape of the roller must depend on the shape of the article to be made. The patentee claims “ binding the extremities of cigars and cheroots with silk, ribbon, “ or other material.”

Secondly, a machine actuated by hand or other power “ for “ cutting wrappers of tobacco or paper, and also for cutting the “ tobacco in small pieces for filling cigarettes ”:—Two toothed wheels on separate shafts are set in motion by a third shaft which may carry either a handle or a pulley. On the two shafts are steel washers, whose edges “ are tightened and pressed against “ each other ” by a nut, and (opposite to each washer) a collar of leather to press the tobacco or paper against the washers. “ To “ prevent the strips from adhering to the washers of leather a “ scraper of metal or wood is placed underneath; ” this also guides the strips into a box below. “ A cover of iron or other “ material ” prevents injury to the fingers of the operator. To cut tobacco for the inside of cigarettes “ fine circular saws or “ washers with roughened peripheries are employed instead of “ the washers previously described.” This machine may be used for making snuff.

Thirdly, a machine for making cigars or cheroots or cigarettes, “ composed of ten rolling apparatus ” similar to those first described, “ and placed on travelling chains, or on straight rules, “ or on the edges of vertical wheels, or on the flange of horizontal “ wheels, any of which may give a continued and onward or “ progressive motion.” At the upper part of the right end of the frame “ is a bed and horizontal tunnel ” where leaf tobacco is put, and a plank by means of a weight attached to it constantly presses the tobacco forward. As the tobacco comes out of the tunnel, a cutting press descends, cuts it in quantities necessary for the cigars and places each quantity in the upper groove of a rotating iron block, whence it is delivered to the rolling apparatus, each in turn. The manual labour consists in furnishing each apparatus with a wrapper “ and giving it the proper inclination.” As each appa-

atus reaches the end of its travel, the handle of its block comes against a pin, opens the block, and delivers the cigar finished; if it is not "perfectly delivered," a rack under which it passes causes it to fall into a tray. The method of connecting the several parts of the machine and of working it is explained.

Fourthly, "a modification of the above machine, but specially adapted for making cigarettes"—Three grooved rollers are mounted one above the other; above is a board whereon are placed continuous strips of paper, the width of each being equal to the length of a cigarette. The paper is tightened against the top roller by a small roller covered with india-rubber; it passes under a knife which divides it into pieces of suitable size, and the first piece arrives at the top groove of the roller. A punch and press send some tobacco from a hopper over the paper and compress it into the groove, after which the loose tobacco is removed by a brush. The paper is further compressed and partially folded under a curved segmental plate and then reaches the bottom of the roller, whence it is transferred to the middle roller. Here it receives a second fold from another plate and is carried down to the top of the lowest roller, where during the rotation the last fold is given, the ends are closed by "two end folders," and the cigarette being completed under the action of a third plate is removed from the groove now on the under side of the roller.

If the cigarettes are to have tubes or mouth-pieces, they must be transferred from the groove to the wrapping apparatus which is "furnished with gummed or pasted paper" for the purpose. This apparatus "is merely an addition" to the machine and "is identical in principle" with the rolling apparatus before described. The mode in which the various parts of the modified machine are put together, the appendages by which they are made to work, and the method of working are fully explained.

[Printed, 2s. 2d. Drawings. See *Mechanics' Magazine*, vol. 54, p. 115; *Patent Journal*, vol. 10, p. 231.]

A.D. 1850, August 29.—N° 13,240.

HUDDART, GEORGE AUGUSTUS.—"Improvements in the manufacture of cigars, and certain improved apparatus for smoking cigars." The first improvement consists in securing the external leaf, "to the extent of about an inch" from the twisted end, with a cement of "amber, gutta percha, india-rubber, or other adhesive substance impervious to moisture."

The second in coating the twisted end to the same extent with a solution of any of the above-named substances, and in perforating the same when dry with one or more small holes.

The third in permanently fixing or cementing to the twisted end a tube or mouth-piece of amber, gutta percha, or india-rubber, the end being previously perforated.

[Printed, 6d. Drawing. See *Mechanics' Magazine*, vol. 54, p. 197; *Patent Journal*, vol. 10, p. 259.]

A.D. 1851, January 11.—N^o 13,443.

ARCHER, JOHN ALEXANDER. — "Improvements in the manufacture of tobacco" by means of a "combination of machinery" for pressing, heating, and cutting it. The principal portion consists of two endless chains having "pressing surfaces" so arranged that the tobacco may be fed in at one end of the machine, be compressed in its progress by and between the surfaces, and be forced out through a mouthpiece from which it is cut by rotating cutters, "the tobacco being subject to the action of free steam as it is introduced into and progresses through the machine." The chains are "connected by transverse bars." The pressing surfaces are "somewhat convex on their outer surfaces," and are so placed "that the convex parts of those below do not come opposite each other, but the convex part of one comes opposite the hollow formed by two of such plates." The chains "are respectively carried by rollers," two of which are adjustable, so that they keep the chains suitably distended. "As it is desirable when starting the machine to work that part which moves the chains without also moving the knife," there is for such purpose a combination (which is minutely described) of drums, worms, and screw wheels, pressing and friction rollers. The upper and under surfaces of the mouth-piece are of steel, and are affixed to troughs, into which steam is admitted, and between which and the surfaces the steam passes on to the tobacco. Steam also is applied to the tobacco during its progress by means of a perforated pipe, "and the sides of the machine are hollow to admit steam so as to heat such sides." When the tobacco is advanced to the mouth-piece, the cutting portion is to be put in motion, "and the drum which gives motion to the chains is to be made fast to the axis, and the machinery will go on working and cutting the tobacco, and the quantity cut off may be varied from time to time by

"changing the drum on the driving or other shaft by which the chains are put in motion." The knives are kept clean by water constantly supplied to the back by means of an endless strap, which has affixed to its surface sponge or other porous matter." The strap is carried by guide rollers, and the way in which they are moved is explained.

[Printed, 2s. 2d. Drawings. See *Mechanics' Magazine*, vol. 55, p. 74; *Patent Journal*, vol. 11, p. 207.]

A.D. 1851, September 18.—N° 13,747. (* *)

PHILLIPS, GEORGE.—"Preventing the injurious effects arising from the smoking of tobacco." And, first, "the use of any suitable material or substance applied to the various modes of cooling down the smoke, condensing the oils, and filtering them from the smoke;" also, "the use of fixed oils and fats" along with the material, as an instance, "wool in grease." Some of the materials are as follows:—"Saw dust, raspings, or chips of wood, cork, broken leaves of trees, hay, bark, grass, paper, charcoal, thin leaves of metal, wire gauze, and fragments of metal, pieces of pumice and other light stone, asbestos, and all kinds of textile fabrics," "hair, feathers, sponge, sand, or other pulverized material." The stem of the pipe may be a tube of glass, and the materials are in a diaphragm in the middle of the tube secured there by perforated corks.

Second, "the construction and arrangement of the several parts," and also "the mode of adapting the bowl of the pipe to the tube," "so as to form a reservoir for the reception of the condensed oils," &c., forming a reservoir "at the bottom and top;" "applying a wet sponge at the top of the tube to form a water pipe." The bowl of the pipe has a longish stalk passing some way through a cork, which cork is fitted into the tube with the filtering medium. The mouth-piece again passes some way through a cork, which cork is fitted into the upper part of the filtering tube. For meerschäum pipes the arrangements differ, but the principle is the same; and for cigar smoking tubes similarly prepared are arranged, with the exception that the end of the tube has a cavity to receive the cigar instead of having a cork.

[Printed, 8d. Drawing. *London Journal (Newton's)*, vol. 40 (*conjoined series*), p. 461; *Mechanics' Magazine*, vol. 58, p. 258.]

A.D. 1851, December 11.—N° 13,857.

MASTERS, THOMAS. — “Improvements in retaining and “drawing off aerated and other liquids, and in charging vessels “with gaseous fluids applicable to vessels for holding solid “matters, and also as a fastening for utensils and apparatus, and “in holders for cigars.” After describing sundry inventions, in which india-rubber plays a conspicuous part, but which do not in any way belong to this series, the patentee informs us that the last part of this invention “refers to a capsule or mouth-piece for “cigars,” and that “the improvement consists in making it of “mineralized india-rubber.” This cigar-holder “collapses close “on the cigar, gives a firm hold, and also a more pleasant “substance to hold in the mouth than the ordinary hard “substances employed for that purpose.”

[Printed, 1s. 4d. Drawings. See *Mechanics' Magazine*, vol. 56, p. 509.]

A.D. 1852, July 20.—N° 14,236.

HUDDART, GEORGE AUGUSTUS. — “Improvements in the “manufacture of cigars.” The first part of this invention relates “to the drilling of cigars in the line of the axis, as far as may be “necessary to facilitate the passage of the smoke from the ignited “end to the mouth of the smoker.” The butt end of the cigar is placed in a cone and pressed against a hollow drill fixed in a hollow mandril, and forming therewith a continuous channel which communicates by means of tubes “with a pair of exhaust- “ing bellows.” Both drill and bellows are worked by a treadle. The cone has a small hole through its apex to admit the drill; it “is capable of sliding along the drill, and it is kept in its central “position by means of guide rods.” To prevent the bellows “from becoming clogged with dust,” the tube which communi- cates with the mandril has its other end inserted into a vessel of water, and the tube which communicates with the bellows has its upper end affixed to the air-tight cover of the vessel.

The second part relates “to the insertion of a tube of amber, “gutta percha, caoutchouc, or other waterproof substance into “the hole thus drilled,” and “to the cementing of such tube” to the outer coating of the cigar, or to “lining the hole drilled in “the cigar with a waterproof cement.” The tube is inserted

"about half an inch in length, more or less," and the external end "is then cemented all round to the outer coating of the cigar." The lining may be effected by means of a hair pencil and a solution of any of the before-named substances.

Full particulars are given of the apparatus and process required for carrying out the first part, also a description of an instrument "for inserting the tubes and cementing them to the coating."

[Printed, 8d. Drawings. See *Mechanics' Magazine*, vol. 58, p. 117.]

PATENT LAW AMENDMENT ACT, 1852.

1852.

A.D. 1852, October 4.—N° 209.

STOREY, JAMES BARROW, junior.—(*Provisional protection only*).—"Improvements in mouth-pieces for pipes and cigars." The mouth-piece is made with several perforations and orifices," so that the smoke is caused to enter the mouth in "numerous small "streams;" it may be made of metal, gutta percha, or other material, "or even in the shape of gauze."

[Printed, 4d. No Drawings.]

A.D. 1852, October 4.—N° 213.

D'HENIN, ANTOINE FRANCOIS.—(*Provisional protection only*).—"Improvements in the treatment and manufacture of tobacco." The raw tobacco is cleansed by "steeping the leaves in a saline "solution, the density of which "depends on the nature and quality of the tobacco. The leaves are then "well trodden, and "piled into a mass, and left to ferment" for about 48 hours. "A mixture of tobacco stalks and salt water is applied round the "sides of the pile, thereby exciting and increasing the fermenta- "tion," and after this preparation the tobacco is made into rolls by cutting, pressing, and moulding. A similar system of fermenta- tion is adopted in preparing tobacco for the manufacture of snuff.

For cigar making the tobacco "is steeped in a saline solution, and "then strained and pressed;" the process is repeated, and after the second pressing it is placed on driers in a closed chamber.

[Printed, 4d. No Drawings.]

A.D. 1852, October 19.—N^o 444.

BENDA, GABRIEL.—"Improvements in apparatus for obtaining "fire for smokers." The object of this invention is (1) the manufacture of a fusee which will "burn with a flame," and (2) its arrangement for use. A long strip of linen, paper, or other substance, is "prepared with the composition usually employed in "the manufacture of fusees," and to one side thereof is attached a strip of linen, &c., "saturated with wax, sperm, or a solution "of caoutchouc, or of other highly inflammable composition." A coil of this is placed in a case having a hinged cover, and a hollow neck on the side opposite the hinge. Inside the case are a toothed wheel, a guide piece (which keeps the fusee "against the "wheel while being protruded," and terminates at the outer end of the neck in a flat head, "on which the fusee is supported while "fire is being obtained"), and a guard to prevent the coil from "coming against the wheel." Outside the case are a stud for moving the wheel, a collar which being slipped on to the neck keeps both parts of the case together, and a removable cover for the mouth of the neck, "roughened on its outer end."

[Printed, 8d. Drawings.]

A.D. 1852, December 4.—N^o 964.

PULVERMACHER, ISAC LEWIS.—"Improvements in pipes "and cigarholders." These articles are so constructed that the smoke shall be drawn through only "a small portion," instead of through "the whole body" of the tobacco.

Pipes:—The bowl has "a perforated bottom or grating" and a cover to the bottom carrying an air-tube; at the side is "a passage "for the smoke into the tube," and on the top "a spring fitted "into a telescopic tube cover" for the purpose of pressing down the tobacco; but other arrangements "may be substituted for the "spring presser." There may be an opening through this cover "for the purpose of inhaling with the smoke the vapour of any "aromatic or other substance placed on the top of the tobacco." When the bowl is charged, a light is applied at the grating.

Another construction :—The bowl consists of two tubes, one within the other, which touch “ throughout their length at part “ of their circumference when they are soldered together;” the outer is cylindrical, the inner conical, gradually diminishing towards the mouth-piece. The soldered portion is slotted throughout the length of each tube, and on the outer tube is a sliding ferrule, having attached to it a pin, which passes through the slot and carries a disc. At the bottom of the tubes is a cylindrical cover, “ made of some material which is a non-conductor of heat,” and pierced with holes, through which the tobacco is lighted and air supplied; a ring or collar on the inner surface of the cover “ is used instead of the grating.” A hollow flanged ring is soldered round the lower portion of the outer tube, and “ a semi-“ circular stopper ” closes in the passage between the tubes near the lower end. There is a hole in the stopper, a hole in the outer tube “ leading into the hollow area of the ring,” and a plug in the ring. A mouth-piece may be added; or near the top may be placed a similar stopper “ having a central perforation;” or “ the “ inner tube may be widened at that end, so as to form a collar “ and to fill up the space between itself and the outer tube, in “ which case a perforation may be made in the collar.” The ferrule may be arranged to work in screw-threads on the outer tube. The method of charging each pipe is described.

Cigar or cigarette holders :—Either the mouth-piece is hinged to the tube to admit of the insertion of the cigar, or a portion of the tube “ is made to fall back for the purpose on a hinge.” The cigar “ must be pierced in several places transversely.” At the bottom of the tube is a grating, also a cover with an air-tube, and the smoke is drawn up at the sides of the tubes.

Another construction :—Two tubes are employed (as in the second construction of pipe); about half of each tube is cut off throughout its length; the edges are soldered together, and the cigar is held between the edges. “ About half way down each of “ the edges,” and “ exactly opposite to each other ” a slot is cut, wherein a blade is fixed “ in such manner as to cut a slit in the “ cigar (corresponding to the length of the slot) as it passes these “ openings, whereby the smoke, nicotine, &c. from the cigar pass “ into the passage between the tubes.” Round the outer tube, at the parts where the slots are cut, is placed “ a hollow oval “ ring,” whose ends “ do not quite meet, but hold a spring “ between them, whereby the cigar is kept firmly pressed against

"the slots and kept steady in the holder throughout." The holder carries a sliding ferrule with a disc attached "for causing the cigar to advance." . . . At each end is a small cylindrical chamber, the upper one "for containing any aromatic or purifying substance," the lower one "for receiving the condensed vapours." A mouth-piece may be screwed to the upper chamber, and a cap is screwed to the lower one "for receiving the ashes." There is also "a stay or bar, against which the lighted end of the cigar rests."

[Printed, 8d. Drawings.]

A.D. 1852, December 20.—N° 1108.

ADORNO, JUAN NEPOMUCENO.—"Improvements in the manufacture of cigars, cigarettes, and other similar articles." This invention relates (1) to preparing the leaf for the inside of the cigar "by cutting it up into shreds," (2) to tools for cutting the leaf for the outside wrapper into proper form and size, (3) to machinery for making cigars, and (4) to machinery for making cigarettes.

2. The tool consists of a handle with a square screw secured to it at right angles. On the screw are mounted two arms, each provided with a circular blade which turns on a centre; the arms are fixed at any distance apart by nuts. When a number of strips have been cut, they are placed one on the other, and the end intended to form the point is cut to the required form by means of a knife (shown in the drawings) and a single blow from a hammer. Paper may be cut in the same manner.

3. The framework consists simply of a number of uprights which support a table top. In the middle upright is inserted a vertical shaft, on which is mounted a "horizontal circular travelling table," actuated from any first mover by a pinion gearing into a wheel fixed on the under side; and on the upper end of the shaft, above the travelling table, is a "stationary circular table," carrying on its under side a circular rack. On the travelling table are fixed six (or other number) frames on which the cigars are made; each frame contains five or six rollers (with pinions on their inner ends), three in the lower (and fixed) part, the others in the upper part, which is hinged to the lower, is moved by a handle, and is held down when closed by a pin and hole. Each frame is carried by a shaft, on which are two pinions, one driven by the rack, the other driving the pinions and rollers. The table "is

“ made to travel one-sixth of a revolution,” then to stop for a space equal to the time occupied by such revolution, then to move on again, and so on, and the frames are supplied by attendants during the stationary periods. The shape of the rollers depends on the cigar to be made, and the patentee claims the manufacture in this machine of a cigarette named Puruelos, “ which consists “ in a cigarette with a mouth tube and entirely enclosed in tobacco “ leaf.”

4. The arrangement of the parts of this machine will be more readily understood by describing its operation :—A long length of paper ascends from a receptacle below between two guides, and thence in front of an opening made at the lower end of a hopper, in which is “ a vibrating shaker or stirrer ” to push the tobacco into the opening. A cylinder, provided with a number of grooves (having at the bottom of each a moveable bar) is mounted in the framework in such manner that the grooves are brought in succession opposite the opening, and a sliding bar pushes forward through the opening a suitable quantity of tobacco into one of the grooves, and therewith a portion of the length of paper. As the cylinder rotates, the paper is brought under “ two india-rubber “ binding rollers,” between which a knife works and cuts off a length from the paper. The tobacco is then tightly pressed into its groove by a punch, the operation causing the sides of the paper to stand up. The folding is commenced by an arm, to the lower end of which is attached a steel plate ; the arm “ is drawn back, “ and upon going forward again, it folds over one side of the “ paper, while a segmental plate folds over the other side and “ thus completes the folding.” The cigarette is now carried forward until it arrives opposite a groove in another cylinder, when the bar is pushed forward and forces it out of its groove into the corresponding one in the other ; it is then pressed against a segmental piece, which prevents it from falling out of its groove, and its ends are partly formed by vibrating arms, and are completed by two wedge-shaped pieces. When the cigarette has passed “ the upper end of the segmental plate,” it is thrust out of its groove by a bar that forms the bottom of each groove in this cylinder also.

A detailed description is given of the eccentrics, levers, connecting rods, &c. employed in the machines.

[Printed, 1s. 2d. Drawings.]

1853.

A.D. 1853, February 28.—N° 503.

FONTAINEMOREAU, PETER ARMAND LE COMTE DE.—(*A communication.*)—"Improvements in drying cigars." The apparatus required for this invention consists of "a tin or brass case" divided into compartments, each of which has its own door and trays sliding in grooves. On the top is a funnel for filling the case with water, and below is a tap for drawing off the water. The case stands on a cast or wrought iron stove provided with fire-place, circulating flue, and chimney. The cigars are placed on the trays and "are isolated from each other by small partitions." The water is to be heated to 170° Fahrenheit, and the drying "is entirely completed" in four or five hours.

[Printed, 8d. Drawings.]

A.D. 1853, September 15.—N° 2146. (* *)

KNUTH, LUDWIG FREDERICK HERMANN CHRISTOPH.—(*Provisional protection only.*)—"Improvements in the manufacture of purses, cigar cases, reticules, bags, tobacco pouches, and other similar articles." It consists "in making the sides or bodies of these articles of an elastic material, so as to increase their capacity and durability," and "has reference more particularly to the description of purses, cigar cases, &c. that are made with a metal frame surrounding the edges." "The fabric proposed to be used for this purpose" "is made of silk and cotton, cemented together by a solution of caoutchouc, with a rib or web of the same material, and afterwards corrugated or crimped by being passed through a machine. Instead of silk and cotton, two pieces of cotton may be thus united by caoutchouc, and afterwards passed through a machine; or thin pieces of leather, or leather and cotton or silk, may be similarly treated and employed. The submitting the fabric to the action of a machine, consisting chiefly of a pair of corrugated or fluted rollers, causes both pieces to become incorporated, and adds to their elasticity."

[Printed, 4d. No Drawings.]

A.D. 1853, December 1.—N° 2795.

JONES, ALFRED ISAAC.—(*Provisional protection only.*)—"An improved cigar light." An easy ignitable matter "composed of cotton or other wool, scented with gum benjamin and cascarilla, and tipped with a composition of phosphorus, nitre, or other similar matters," is secured at one end of a thin piece of wire or other like material. "The phosphorus end is rubbed or struck, and the wire piece is then inserted in the cigar, saving the trouble of holding it."

[Printed, 4d. No Drawings.]

1854.

A.D. 1854, January 3.—N° 12.

DE BEAUREGARD, FELIX ALEXANDRE TESTUD.—(*Provisional protection only.*)—"Improvements in drying cigars and ligneous materials or other substances." The cigars are laid upon a grating or network in a box, and under the grating is placed "a shallow tray containing powdered chloride of calcium or perchloride of iron, or other substance having a great affinity for water; a few sheets of blotting paper are placed in the bottom of the tray to absorb moisture." The box being covered with a lid, the moisture contained in the air within is absorbed by the "hygrometric substance," and "the dry air takes up the moisture from the cigars, which are thus quickly dried." If the box is heated by a lamp or otherwise, "the operation is accelerated."

[Printed, 4d. No Drawings.]

A.D. 1854, February 15.—N° 366.

BARRATT, OCTAVIUS.—(*Provisional protection only.*)—"An improvement in the construction of tobacco pipes," whereby the smoke enters the mouth without having first passed through the mass of burning tobacco." The large end of the bowl is covered "with a grating of small holes," and the air passing through "keeps the burning tobacco alight." At the end into which the stem enters an opening is made, through which the

tobacco is put and where it is lighted. "This invention is applicable to pipes of all materials."

[Printed, 4d. No Drawings.]

A.D. 1854, February 27.—N° 475. (* *)

BROOMAN, RICHARD ARCHIBALD.—(*A communication.*)—"An improvement in the manufacture of tin foils or sheets," Lead is combined with tin mechanically, a sheet of or sheets of tin being laid on an ingot of lead, of the thickness sufficient to cover the surface of the lead, and become extended evenly therewith as it is rolled out. The exposed surface will thus consist always of pure tin, while the inside consists of lead. The foils or sheets thus produced are applicable "for many of the purposes to which those of pure tin are applied, such as for wrappers of tobacco," &c.

[Printed, 4d. No Drawings.]

A.D. 1854, August 18.—N° 1819. (* *)

JOHNSON, WILLIAM (*A communication.*)—"Improvements in moulding or shaping articles of vulcanized caoutchouc." These are in making snuff boxes and similar articles. "The moulds are previously prepared by having their interior surfaces slightly coated with tallow or other similar fatty or oily matter." "When a sufficient quantity of material has been placed in the mould to give the required thickness to the article to be shaped, the mould is closed and placed in or under a powerful press." "The mould having been sufficiently pressed is removed from the press, and placed between two thick plates of red-hot iron, and the mould between these red-hot plates is then again introduced into the press, and the pressure is increased in proportion as the mould gets heated. When these red-hot plates have imparted sufficient heat to the mould, it is withdrawn from the press and plunged into cold water, and allowed to remain there until cool. The article is then taken out of the mould, perfectly shaped to the form and contour of the mould, and having a high degree of compactness, solidity, and polish." "To manufacture articles of variegated colours, veined, striped, or marbled, scraps or figures cut out of colored india-rubber are first introduced into the mould, or mineral colors or other colored substances may be employed, and the filings or waste scraps, to form the body of the article, are then introduced

"above them," and other layers are introduced. "It is proposed to apply this process of moulding to the joining or soldering of articles composed of hard vulcanized india-rubber, for this purpose the broken parts are first scraped off, and dust or powder of hard vulcanized india-rubber is introduced between the scraped surfaces. The whole is then submitted to a high degree of heat and pressure."

[Printed, 4d. No Drawings.]

A.D. 1854, September 25.—N° 2064.

SURGEY, WILLIAM PALMER.—"Improvements in cigars, cigarettes, and cheroots." The improvement consists in applying to the lighting end a portion of a composition "capable of being ignited by friction or other pressure," and forming "a component part of the cigar," &c. The end is prepared by dipping it into a solution of gum, glue, or other adhesive, thickened "with a small quantity of nitrate of potash" (which by preference should be previously heated), and in some cases with a little finely powdered charcoal, cascarilla bark (or other flavoring matter), in addition. When the end is quite dry, the composition is applied "either in a dry or semifluid or pasty state;" in the former case the end must be again moistened with the adhesive, in the latter it is simply dipped into it. The patentee does not lay claim to any particular composition, but one which he has found to answer his purpose well consists of glue 3 lbs., and phosphorus 24 oz., melted and mixed together; to this he adds in powder nitrate of potash 8 oz., resin 6 oz., Venetian red or other coloring matter 1½ lbs., glass ½ lb., and whiting 1½ lbs.; the whole to be well mixed together.

[Printed, 4d. No Drawings.]

A.D. 1854, November 4.—N° 2338.

ADCOCK, JOHN.—"The novel application of the stem or stalk of the tobacco leaf for various useful purposes." The object of this invention is to utilise the stem or stalk of the plant; it is to be stripped from the leaf and to be reduced to pulp, and then to be "manufactured into a fabric, or material something resembling paper."

When the fabric is "dry and firm," wrappers of cigars or cheroots may be made of it; the cuttings and small pieces may be

used as a filler; or it may be cut up or "shredded into thin filaments so as to resemble ordinary manufactured tobacco."

[Printed, 4d. No Drawings.]

A.D. 1854, November 4.—N^o 2339.

WRIGHT, WILLIAM JOHN.—(*Provisional protection only.*)—"The novel application of the stem or stalk of the tobacco leaf." The stalk, which is usually manufactured into snuff, is by means of this invention made "equally useful for smoking purposes." After being stripped from the leaf it is cut up into pieces of suitable length, or shredded or otherwise prepared, and, if thought advisable, steeped in water. The pieces are employed as fillers or insides of cigars in lieu of the leaf, care being taken that the wrappers are of the same kind of tobacco as the stalks. Again, the stalks may be used as "ordinary smoking tobacco" by shredding them "into very fine filaments," and subjecting the tobacco thus manufactured to any process "that may render it more suitable for the market;" in this case too "care should be taken that different kinds of tobacco do not become mixed."

[Printed, 4d. No Drawings.]

A.D. 1854, November 16.—N^o 2426.

WILSON, ROBERT.—"A new or improved ornamental material "or fabric," on one surface of which "designs called tartan plaid or chequered work" may be produced "by the process "of ruling" for the purpose of ornamenting snuff boxes, cigar cases, and other articles. The fabric consists of "leather, woven or "felted fabric, parchment, or vellum;" the surface which is to receive the design "is prepared with a ground or preparation "either of oil, or water colour, or varnish," and the ruling (either by hand or machinery) is effected by means of "pens containing "colour." When the designs have been produced in water colours, they are to be coated "with varnish of boiled or drying "linseed oil, or other varnish having sufficient flexibility not to "crack by the folding of the said material or fabric;" when in oil colours, "the varnishing is less necessary." Although it is preferable to prepare the surface before ruling, the design may be applied "without such preparation."

[Printed, 4d. No Drawings.]

A.D. 1854, December 9.—N° 2598.

KING, JAMES JOHN, and BRINDLEY, THOMAS.—“Improvements in cigar cases, card cases, and other similar cases.” The following description relates only to cigar cases. A strip of wood is secured to one side within the case, and to the top of this strip is jointed another strip having fixed to its lower end a spring “which constantly exerts a pressure towards the cigars in the case and presses them against the opposite side.” The lower part of the moveable strip “is tipped with a slight strip of metal formed of a curve to maintain a proper point of contact with the cigars,” or the strip of wood may be so shaped; the extreme end is “simply a piece of leather to facilitate pushing back the spring when filling the case.” The cigars are introduced at the bottom of the case, where is a cover, hinged and fastened by a spring catch. The cover has on the inside “a raised projection,” which is arranged “to enclose the lighters.” All the cigars rest on the projection, except the one which is the first to be taken out; this one rests on “a little shoe” that is fixed to or forms part of a sliding plate. This plate is moved by a thumb nib which traverses a slot in a guard plate. In the top of the case is a small lid hinged and having a constant tendency to shut by reason of a piece of elastic webbing “fixed in a state of tension thereto.”

To take a cigar out, it is simply necessary “to raise the slide;” and when the slide is lowered, the shoe takes its place below the next cigar which is pressed forward by the spring.

The patentee does not confine himself to any particular material or shape.

[Printed, 8d. Drawing.]

A.D. 1854, December 11.—N° 2610. (* *)

EBERT, CHRISTIAN HENRY RICHARD, and LEVISOHN, LIPPMANN JACOB.—“Improvements in the mode of rendering certain cases or receptacles extensible.” These are, causing the “back ends” of “pocket books, pocket cases, blotting books, portfolios, and the like, and the top and bottom of portemonnaies and lady’s companions,” and the backs of “desks, and of any compartments therein, to be formed by an extensible band or connecting piece, composed wholly or partly of india-

"rubber, gutta percha, or other suitable elastic material." This invention may also be applied to cigar cases.

[Printed, 10d. Drawing.]

1855.

A.D. 1855, January 12.—N° 80.

ONIONS, JOHN. — (*Provisional protection only.*)—"Improvements in the construction of pipes and tubes for the use of smoking pipes and cigars."

This pipe is composed of (1) a cylinder or tube "to contain tobacco or cigar," (2) a moveable cap fitted to one end and "perforated with holes in front to admit air," and (3) "a piston or slide with passage through it." The upper portion of the piston is narrow, the lower portion which fits into the cylinder is "enlarged at one end to receive the tobacco or cigar, and is used, or intended so to be, for the purpose of compressing the cigar or tobacco against the cap," thereby "causing proper combustion, and dispensing with the ordinary mode of using the finger or pipe-stopper."

[Printed, 4d. Woodcut.]

A.D. 1855, February 8.—N° 299.

PULS, FRANCIS. — (*Provisional protection only.*)—"Improvements in apparatus to be used in smoking tobacco." This invention consists "in the construction and application of finely perforated plates composed of metal, glass, china, clay, or other suitable material, and of various size and configuration, so as to admit of their being inserted at pleasure near the lower part of the bowl of the various tobacco pipes, to which they are specially adapted," so that the oily and narcotic substances "may percolate through the said plates and be carried away from the remaining tobacco without accumulating in the lower portion."

[Printed, 4d. No Drawings.]

A.D. 1855, April 19.—N° 875. (* *)

JOHNSON, JOHN HENRY.—(*A communication.*)—"Improve-
ments in the manufacture of articles of hard india-rubber or
"gutta percha, or compounds thereof, and in coating or covering
"articles with the like materials."

Among numerous articles proposed to be made of the above
materials "snuff boxes" and "tobacco pipes" are mentioned.

Respecting the preparation of the materials and the mode of
moulding reference is made to the Specifications of T. Hancock,
A.D. 1843, No. 9952; T. Hancock, A.D. 1846, No. 11,135;
C. Hancock, A.D. 1846, No. 11,032; Brockeden and Hancock,
A.D. 1846, No. 11,455; W. Johnson, A.D. 1854, No. 1819;
J. H. Johnson, A.D. 1854, No. 752; J. H. Johnson, A.D. 1855,
No. 506; and J. H. Johnson, A.D. 1855, No. 855. The articles
are first moulded when in a soft state, and then submitted to a
high degree of heat in steam heaters, or to the action of a sulphur
bath. "In some cases it is proposed to form the article of this
"compound in a plastic state, and then submit it to the action
"of heat after being removed from the mould, or the article may
"be submitted to the heating process while still in the mould.
"During the process of vulcanizing, the article may be embedded
"in magnesia, which is preferable to soapstone or plaster, since
"these materials bleach the articles during the process
"whilst the magnesia allows them to come out of the mould
"quite black."

[Printed, 4*z*. No Drawings.]

A.D. 1855, July 27.—N° 1713. (* *)

SMITH, ANDREW.—(*Provisional protection only.*)—"Improve-
ments in portable cases or holding receptacles for cigars,
"spectacles, cards, cutlery, and other articles." The advantages
claimed for this case are, "perfect security when the case is closed,"
"facility of fully opening and closing," and "complete exposure
"of the contained articles to a greater or less extent as may be
"desired." Cigar cases present "the ordinary flat pocket case
"shape," and the greater portion of the length "is solid, whilst
"the remainder is bi-valved or formed with two separate doors
"hinged one on each side to the body." *The line of junction
"of the two-hinged opening pieces is in the plane of the case
"being either quite in the centre" of the case's "thickness, or

" more or less to one side," but the central junction is preferable. " The two hinged doors are held together when the case is closed " by an end-embracing catch of any convenient kind," and when the catch is thrown back " one or both of the hinged doors may " be turned over to a right angle with the plane of the case," so as to expose the upper ends of the cigars.

[Printed, 4d. No Drawings.]

A.D. 1855, September 24.—N^o 2134.

MUSTO, JOHN, and BEAR, FREDERICK.—" Improvements in " machinery for the manufacture of tobacco." This invention consists of " certain novel mechanism," by the use of which the ribs or stems of the tobacco leaf are " torn into long filaments," and thereby utilised for mixing with the leafy portions. The principal parts are (1) a cast iron skeleton framing, enclosed with wood on all sides, (2) a hollow cylinder mounted on the main shaft, (3) two plain or grooved feed rollers, (4) spur gearing, and (5) a revolving fan. The cylinder is composed of strips of wood, which are severally connected by screws taking into holes in a casting; and each strip carries " a series of tempered metal points " or teeth " arranged (the arrangement is detailed) so that each row may be " successively brought into action during each revolution of the cylinder." In order to keep the teeth " as near " as may be to the centre of the feeding rollers" the bearings of the axle of the main shaft are adjustable. The feed rollers work in bearings, and " are firmly held in position by screws at each " side of the machine;" a piece of steel or other material is fitted " over half the diameter of each roller for the purpose of " stiffening the same, and preventing springing of the rollers as " the material is fed or drawn together into the machine." The fan has a pulley fixed on its axis, and a cross gut connects it to a larger pulley on the main shaft; it is provided with a sliding shutter, " by raising or lowering which the force of the blast can " be regulated." The machine being set in motion by any prime mover, the stems are placed by hand between the feed rollers, are drawn forward, and are torn into shreds by the teeth, when they " fall by their weight into a receiver below, the lighter portions " being carried off by the action of the fan blast into another " receiver."

[Printed, 8d. Drawing.]

A.D. 1855, November 22.—N° 2631.

ROBERTS, JOHN, junior.—“A machine or apparatus for cooling tobacco during the process of manufacture.” On a frame bolted to the floor stands an open tray supported on bracket standards. Within the frame is a vertical case, containing a fan wheel or blower, and having concentric openings in its sides for the admission of air. The top of the case is formed into a tube “passing through the lower portion of the tray,” and over the tube is a “perforated plate or spreader supported on feet for the purpose of diffusing the draught.” The tobacco is placed on a wire gauze or perforated partition, which is mounted on a frame for the purpose of being readily put into the tray or taken out of it. A space is to be left between the spreader and the gauze “for enabling the cold air to circulate freely through the tobacco.” The blower is caused to revolve rapidly “by the aid of multiplying wheels and strap gear driven by steam or any other motive power.” A forked-head sliding bar throws the driving shaft in or out of gear with the machine, and the axis of the blower is provided with tightening screws.

[Printed, 6d. Drawing.]

A.D. 1855, November 29.—N° 2699.

BERGEON, PIERRE LOUIS.—(*A communication.*)—“An improved spitting box or spittoon.” A basin with rings for lifting it is fitted into a case, which may be of any shape and mounted on feet and castors, and which has a cover “hinged at one end to the inside.” Under the case is a pedal borne between two lugs; one end projects beyond the front of the case, the other is connected by a link to the lid. A spring is fitted between the pedal and the bottom of the case; it is compressed by pressure on the pedal, and serves to close the cover.

Modification 1. A drawer containing a basin is let into a case; there is a spring at the back of the case and another on the top; one end of the latter takes into a recess in the drawer, acts as a catch, and prevents the drawer from being pushed forward by the back spring. The catch is disengaged by aid of a button; and the drawer “may be closed by pushing it back with the foot.” If a stronger back spring is preferred, a stop must be formed at the back of the drawer “to prevent its coming completely out of the case.”

Modification 2. A case is provided with a lid formed so as to project a little beyond the front edge of the case; the lid may be raised by the foot and rest against a support at the back.

[Printed, 6d. Drawing.]

1856.

A.D. 1856, January 3.—N° 18.

DISTIN, WILLIAM ALFRED.—"Improvements in pipes for "smoking." The bowl is made with an opening in the side for the introduction of the tobacco, and at the bottom with a passage into a cap. There is also a separate passage from the bottom to the top of the bowl, and on the top is another cap with a socket for the insertion of a tube. The upper cap "is brought down low "enough on one side" to close the opening after the tobacco is lighted; for this purpose it is turned or screwed round. The smoke descends into the bottom cap, and thence is drawn up the separate passage into the tube through the upper cap. The bowl may be of clay or suitable material, and of straight or other convenient form; the caps (of wood, metal, &c.) should be made to screw on and off.

Modifications. Sometimes the bowl is made with "one or "more smaller openings" in the side "merely for the admission of "air;" sometimes with an opening at one or both ends "to allow "the tobacco to be introduced at either of such ends," such opening being closed with a plug when the tobacco has been put in. Sometimes the passage up the bowl is made "much wider at "the upper part." Sometimes the bowl and caps are in one piece, and there is required only a moveable piece for the purpose of closing the side opening.

[Printed, 6d. Drawing.]

A.D. 1856, January 14.—N° 98.

POLLAK, ADOLF.—(*Provisional protection only.*)—"A new fusée "or cigar light," which it is proposed to call "Pollak's perfumed "cigar light." Strips of white or colored paper, about two inches in length, "are steeped in a solution of nitre or other "suitable salt that will cause the paper to burn slowly and with-

"out flame;" they are afterwards "dipped in a perfumed solution" and "made into rolls gummed or not as required," and finally tipped with phosphorus or other inflammable material to "cause them to ignite when rubbed against a rough surface."

[Printed, 4d. No Drawings.]

A.D. 1856, January 18.—N^o 136.

SCHLOSS, JOSEPH.—"A piston bolt, or certain improvements "in fastening travelling bags, portmonnaies, cigar cases, writing desks, drawers, doors, and similar objects where locks, bolts, or clasps are employed." This invention "may be used either for mere fastening or bolting purposes or combined with a lock." The bolting apparatus is composed of (1) a cylinder "whose length may vary between one and three inches, and whose diameter is "from one-eighth to one inch or more," (2) a spiral spring fixed at one extremity to a knob at one end of the cylinder, (3) a piston which works in the cylinder "at about half way of the length of "the cylinder" against the spring, and which has secured to its lower part a small pin that "runs in a small opening in the female "part of the clasp," (4) a hook "of the ordinary shape" fixed on the male part opposite the pin. The hook "by a slight pressure "is forced to catch that pin, whereby the closing is effected." To open the clasp "a slight pressure on the knob of the piston" is required.

This fastening "is chiefly intended for small objects of daily use, "such as portemonnaies, ladies' bags, cigar cases, &c."

The apparatus, when applied to a lock for larger objects, such as chests, drawers, &c., "although based on the same principle, is "somewhat more complicated." A plate with two hooks moves inside the box of the lock "and is worked upon by the piston." A pin "secured on the plate" is caught by one hook of the tumbler when unlocked and by another hook of the same piece when locked. The bolting is caused by hasps entering corresponding openings in the box and catching the hooks of the plate, and the unbolting by pressing the piston "from right to left," which "imparts a similar motion to the plate" through the pin of the piston. A full description of the lock and its action and a modification in which the lock is "above the bolt" will be found in the specification.

The apparatus may be made to work as a "puzzle lock" by making the knob of the cylinder moveable and with "an internal

"projection" that corresponds to a projection on the piston. By turning the knob the projection "is brought downwards" and "meets the projection" of the piston, "by which the opening is prevented." In this arrangement the piston "must be cylindrical;" in other cases "it may be of any convenient form."

[Printed, 6d. Drawing.]

A.D. 1856, January 24.—N° 188.

SOLMONS, JOHN, and LANDER, EDWIN.—(*Provisional protection only.*)—"A new or improved cigar holder." "A small tube-like vessel, open at top and closed at bottom," is screwed or otherwise secured to a stand of any suitable substance. The opening "is of a size and shape which fit it for the reception of a cigar." In the side of the tube is an aperture, to which is fastened one end of a piece of vulcanized caoutchouc or other flexible tubing; the other end carries, or is formed into a mouth-piece.

[Printed, 4d. No Drawings.]

A.D. 1856, January 24.—N° 194.

FISHER, DAVID.—"Improvements in machinery for pressing, cutting, drying, and opening tobacco." These processes "are effected consecutively either at one operation, or if preferred at two, considering the pressing and cutting as one, and the drying and opening as the other."

Apparatus for pressing and cutting:—A frame supports horizontally the shaft of a flanged cylinder; it has also several arms that hold the axes of a series of rollers "placed above and parallel with" the cylinder. If there are, say 7 rollers, "between the cylinder and roller No. 1 a space of about eight inches is proposed to be left, six inches at No. 2, four inches at No. 3, three inches at No. 4, and two inches at Nos. 5, 6, and 7." Spur gear is attached to each end of the cylinder and roller shafts, the gear of the former operating that of the latter, and itself being operated by pinions, worm wheels, and worms, one of which "is turned by a lever operating a changeable ratchet wheel upon it;" this wheel regulates the speed of the cylinder "and gives to it a very slow, precise, and regular movement." A circular knife is fixed to a revolving shaft in a sliding frame which is *moved up and down in grooves by a crank shaft and connecting*

rod ; and a stone or grinding wheel, revolving at quick speed, " is set against the bevel and edge, or either, of the knife to keep it sharp while at work." The tobacco is placed upon an endless feeding belt ; it enters the machine between the cylinder and No. 1 ; it is confined laterally in its passage by the flange, and after passing No. 7 is forced out through an aperture and subjected to the knife. The arrangement of the knife may be varied, and three modifications are described.

Apparatus for drying and opening :—A hollow cylinder, " laid in an inclined position " and supported at each end upon two friction wheels whereon it revolves by means of suitable gearing, receives heat from a furnace below or " through the medium of a curved plate " covering about one-fourth of its periphery, and a top plate, " forming about half a circle," confines the hot air round it. The interior is " studded with numerous short hollow cylindrical projections " proposed to be arranged " diagonally, in longitudinal rows ;" these transmit heat by radiation and stir up the material within." Over " the back end of the furnace " is a steamer, in which the cut tobacco is steamed (if required), before it enters the cylinder ; here it gradually descends and falls out at the lower end on to an upper opening drum ; it is carried round until it meets a lower drum " turning in the reverse direction." Each drum is studded with pegs and receives also a zig-zag motion by means of a crank on the end of each shaft. By this arrangement the tobacco is opened out.

[Printed, 10d. Drawing.]

A.D. 1856, February 22.—N^o 455.

WALLACE, WILLIAM VINCENT, and SOWELL, BENJAMIN LAWRENCE.—(*A communication.*)—"Improvements in treating tobacco in order to manufacture cigars and other articles for smoking, together with the manufacture of cigars and cheroots from tobacco so treated." Such portions of the tobacco plant, as remain "after removing the finest and best portions for the manufacture of cigars," are formed into pulp with the addition of liquid or steam thereto. The pulp is made into sheets "by passing it through rollers directly from the pulping engine, or by previously passing it through draining sieves, or frames, or presses." After the tobacco is rolled into sheets it is sprinkled, if found desirable, "with the liquor expressed by the rollers,"

and when dry it is cut up into such forms as may be required for cigars, cheroots, or cut tobacco. Any description of pulping, draining, or rolling machinery may be employed.

[Printed, 4d. No Drawings.]

A.D. 1856, April 11.—N° 872.

DAVIS, ROBERT.—“Improvements in the construction of “tobacco pipe stems.” The improvement consists in the introduction into the stem of a removable “lining tube of clay or other “similar material.” The stem is made in three parts screwed together; the bottom part which fits into the socket of the bowl, the middle part, and the mouth-piece which by preference is of amber. The bore is sufficiently large to admit the lining tube, and at each end is a washer of cork against which the extremities of the tube rest. The tube is formed with a projection on it, and a small spiral spring, placed round the tube between the projection and the end of the bottom part, forces the tube “against the “washer next the end of the mouth-piece” and maintains “an “air and smoke tight contact.” Sometimes the clay tube is inserted into a tube of zinc or other metal; in this case another washer “is placed within the lower end of the metal tube,” which is contracted to keep the washer and clay tube from dropping through, and the projection is formed on the metal tube; the upper washer also is placed within the metal tube.

[Printed, 6d. Drawing.]

A.D. 1856, May 9.—N° 1100.

BEAUCHÉ, LOUIS.—“A machine for the manufacture of cigars.” The principal novelty in this invention consists in the employment of “short endless bands of vulcanized india-rubber revolving in “contact with each other.” Standards carrying a pair of rollers are secured to the table of the machine, and pieces of metal hinged to the standards carry another pair of rollers. Round each pair is an endless band “somewhat longer than the desired length of the “cigar,” and fixed to the hinged pieces is a curved plate or cover provided with a handle and a spring catch for keeping the plate in position. There may be several sets of similar apparatus on the table. Motion is imparted by gearing on the axes of the rollers connected to a treadle, and arrangement is made “for “stopping the movement of one or other pairs of revolving bands.

"without stopping the other parts of the machine." The operator places sufficient tobacco for a core on the lower band, brings the upper band down thereon, and sets the rollers in motion, when the bands revolve in opposite directions and roll up the core. He then stops the machine and removes the core to another pair of bands. Having cut a leaf for the wrapper "into a parallel strip," he places it on the lower band, "holding it at an angle of about "60 degrees" with the axes of the lower rollers, lays the core thereon, presses down the upper band as before, throws the clutches into gear by means of a lever and rod, imparts motion, and thereby winds the wrapper round the core. The tip is produced by rolling the outer leaf between pieces of metal, bone, or other material (the construction of which is exhibited in the drawing), fixed "underneath the contact surfaces" of the bands; the superfluous portion of the wrapper is cut off "either by hand or by attaching "a curved knife to the machine," and the end is fastened round the tip with paste. "Other known means" of motion may be employed.

[Printed, 10d. Drawing.]

A.D. 1856, August 1.—N° 1823.

CHEVALIER, EUGENE PERRÉ.—"Improvements in the manufacture of cigars." The cigars are made in moulds and presses. The mould "of composition, plaster, or of any other absorbent substance, or of metal," is formed in two pieces, "each representing the hollow of a semicircle and of the shape of a cigar; "the two sides of the hollow are chamfered, and the mould is "kept closed when necessary by a spring clasp or clamp." The inside of the cigar "is made in the usual manner but with less tobacco." The mould being closed is held in one hand, and "the tobacco which projects from the crevices" is pushed in by aid of a metal instrument "with a blade of the thickness of the "back of an ordinary table knife," but without an edge on either side; after this the clamp is applied. When the moulded tobacco is taken out, "what projects from and exceeds the size of the "mould" is cut off; the rolling is performed in the ordinary manner, and the cigar, cut to the required length, is immediately enclosed in the press. The press, which can be made with any number of moulds, opens with a hinge and closes with a spring. "The semicircles of the top part have sharp edges and are held

"together at the end by a band of metal having a metal stop" at each side. The bottom part of the moulds "is cylindrical" "with sides or edges higher than those of the top part and" "the surface flat." In shutting the press the stops "rest upon" "the bottom part, so that the moulds may always preserve the" "same diameter." The cigar requires pressing only "for an" "instant," and it can be then taken out ready for use. A button acts as a handle for opening and shutting the press.

[Printed, 6d. Drawing.]

A.D. 1856, August 8.—N° 1872.

STEPHENS, JOHN.—(*Provisional protection only.*)—"An improvement in pipes for smoking," whereby the fumes of tobacco are drawn into the mouth through ice, whilst the water is prevented from falling into the bowl. There are employed (1) a stem "of sufficient capacity to hold a certain quantity of ice;" (2) a removable plug "having grooves round its outer edge;" (3) an inner tube "leading to the bowl and resting at top against" "the plug, or fitting, but not tightly, into a recess in the under" "part thereof;" and (4) a cap fixed on the tube and screwing on to the stem. The inventor thus describes his mode of using the above:—Having detached the tube and bowl from the stem and taken out the plug, he puts ice into the upper part of the stem, replaces the plug, introduces the tube, and screws it to the bottom of the stem. The smoke will be drawn up the tube, between the outside of the plug and the inside of the stem, through the ice, while the water will drop down the grooves in the plug outside the tube into the bottom of the stem, whence it may be removed from time to time by unscrewing the cap, "or by a valve, or" "through an orifice in the thread of the screw or the cap." Or there may be an orifice in the bottom of the stem and a collar (having also an orifice) over the part where the tube and stem are connected, so that the water may be removed by turning the collar round until the hole therein coincides with that in the stem.

[Printed, 4d. No Drawings.]

A.D. 1856, October 4.—N° 2327.

PICARD, ALEXIS.—"An improved tobacco pipe." The pipe stem carries on its under side, about an inch or inch and a half *from the bowl*, a reservoir for the collection of the oil. The pipe

s made "of the ordinary clay or other suitable material," in a cast-iron or copper mould of such shape that the pipe stem is formed with a short stem which is pierced with a hole communicating with the bore of the pipe stem. A reservoir of clay, glass, caoutchouc, or other material is secured to the short stem, and if necessary a ferrule of caoutchouc is fitted to the short stem for fixing the reservoir more firmly.

[Printed, 6d. Drawing.]

A.D. 1856, November 17.—N° 2712.

COPE, THOMAS.—(*Provisional protection only.*)—"Improve-ments in tobacco-cutting machines." An endless wire band works over a series of rollers in the trough placed to feed the tobacco to the cutters. The tobacco is pressed from above by a shorter endless wire band placed at an angle and supplied with a series of rollers, so that it is compressed as it travels towards a metal mouth-piece and ready for the cutters. These are scimeter-shaped knives on the periphery of a metal disc and arranged to be self-sharpening; or they may be straight-edged, and an oscillating motion may be given to them by suitable mechanism. The bands "may be moved by a cog wheel and endless screw, and the cutters are operated by means of straps."

[Printed, 4d. No Drawings.]

A.D. 1856, November 21.—N° 2760. (* *)

ROTHENHEIM, SIGMUND.—(*Provisional protection only.*)—"An improved walking stick pipe."

By this invention canes or walking sticks are convertible into tubes for tobacco pipes. The mouth piece is fitted to the thin end of the cane, and the ferrule, which is hollow to receive the mouth piece, screws off and on to protect it when the stick is used for walking. The knob is hollowed out to form the bowl, and is lined with metal or clay. The cap of the bowl has a hinged lid. The knob or handle may be of meerschaum, and the knobs are formed to receive a small stock of lucifer matches for lighting the pipe, or for snuff. The inside of the tube or stem is lined with clay or caoutchouc. The knob or bowl has also a short stem, with or without a mouth piece, and the inside of the cane is enlarged to receive it. By this means the walking stick may be used as one long pipe, or the top being removed, it may

be used as a short pipe, whilst by screwing on a cap the long stem may be used as a walking stick.

[Printed 4d. No Drawings.]

1857.

A.D. 1857, January 9.—N° 83. (* *)

BAGSHAW, JOHN, and HARRIS, JOHN PAINE.—“Improved medicinal mixtures adapted for curing disease of cattle.” These are, first, “copper dissolved in aqua-fortis for curing ‘foot rot.’”

Second, to a gallon of tobacco-liquor is added a certain proportion of turpentine, spirits of wine, sal ammoniac, soft soap, and “halken root,” for curing “scab mange.” “The halken root” is used “as a dye to mark those sheep that have been operated upon by the above mixture.”

Third, birthwort, rhubarb, brandy, spirits of nitre, laudanum, gentian root, ginger, sulphate of magnesia, gin, and syrup of caraway seed. “This mixture” is “used as a lambing drink.”

Fourth, nitrate of potash, spirits of turpentine, sulphate of magnesia, and Armenian bole. This mixture is “used as a scouring mixture for cattle.”

Fifth, “sulphur vivian,” “assessetia,” helebore, oil of wormwood, and white lead powder. This mixture, called a “fly powder,” “is well adapted for preventing flies from striking sheep.”

In all of the above mixtures the proportion in which each substance is used is stated.

[Printed, 4d. No Drawings.]

A.D. 1857, January 23.—N° 206.

VASSËROT, CHARLES FRÉDÉRIC.—(*A communication from Edmond Armand Louis D'Argy.*)—(*Provisional protection only.*)—“An improved phosphoric fusee or tinder box and lighter.” A box of any metal is divided into two compartments, one for fuses or tinder, the other to contain “a toothed wheel mounted on an axle supported by the side of the box;” at the outer end of the axle is a small button or handle. The top of the compartment

containing the wheel "is of a form adapted to it, with a hole in its centre large enough to allow of the phosphoric part of the fusee or tinder entering therein and touching the wheel." Instead of a wheel a rack may be employed receiving motion from a button or handle placed outside the box.

[Printed 4d. No Drawings.]

A.D. 1857, February 6.—N^o 339.

GREEN, WILLIAM.—"Improvements in manufacturing or producing substitutes for leather for boots, shoes, and other uses, and in machinery or apparatus for effecting the same." The patentee claims the invention of producing imitations of leather upon sheet iron or other metal, upon millboard, papier-maché, wood, and similar materials," also "upon woven or felted fabrics," either before or after the materials have been fashioned to any given shape.

He makes many articles besides boots and shoes of his artificial leather; for example, "pipe or cigar cases," in the manufacture of which he prefers "using as the body or groundwork thereof iron or other metal." The metal, "either before or after being coated with paper or other soft material, is cut, pressed, and embossed to the desired shape," by "the ordinary machinery employed for similar purposes," and "if not previously coated with paper, is now coated therewith." It is then coated with a solution of india-rubber or other waterproof solution, after which "an imitation of the grain of leather, or of stitching, or other marks or ornaments, is produced thereon by means of suitable dies."

"When greater toughness and body is required," he employs millboard, or layers of paper, or paper and a woven or felted fabric combined.

The body of the article thus prepared is coated "with a composition of paste and glair, or equivalent matters, or with varnish or paint." Sometimes the grain &c., is produced "at the first stamping operation," and sometimes at "the finishing process."

Machinery for coating, varnishing, and imitating "stitching or binding of boots, shoes, and other articles," is described in the specification.

[Printed, 2s. Drawings.]

A.D. 1857, February 7.—N° 352.

WRIGLEY, FRANCIS. — (*Provisional protection only.*)—"An improved apparatus for cutting tobacco." This invention is more particularly applicable to cutting tobacco when manufactured into cakes or rolls. A knife having a handle at one end is keyed at the other on to a horizontal rod placed at right angles to it and supported in bearings on a stand. "The opposite end of this rod is cranked and connected by a lever to a click or ratchet taking into a ratchet wheel, to which is secured a worm wheel working into and imparting motion to a worm or askew toothed rack." The tobacco is placed within a box on the stand, which has one end open. "The action of raising the knife causes the click to take up a tooth of the ratchet wheel; this turns the worm wheel and advances the rack, which forces forward the tobacco;" the knife being depressed cuts off the projecting portion of the tobacco which falls into a receptacle provided beneath the knife. To replenish the box "the lid may be raised and the rack drawn back."

[Printed, 4d. No Drawings.]

A.D. 1857, February 24.—N° 543. (* *)

JOHNSON, JOHN HENRY.—(*A communication from Hypolite Marie.*)—"Improvements in fastenings for dress and other purposes." This invention is "more particularly applicable to pocket-books, purses, cigar cases, travelling bags, and other similar articles." It is described as applicable to a memorandum book:—A hooked plate is secured to the flap of the book either by rivets or by an elastic or non-elastic band; and the hook takes into a corresponding holding plate which is not rivetted to the cover but is fastened by "two small claws or tongue pieces being passed through the material" and turned down on the inside. The novelty claimed for the hooked plate is "that it is quite flat on the surface and has its extreme edge turned under so as to form a hook." A small button may be fixed on the plate to aid in pushing the hook in or out of the holder, or a recess may be made in the plate for the same purpose. The upper portion of the holder "is inclined" so that the hook "slides freely up over it until it catches in the recess" therein.

In some cases it will be found convenient to place a number of holders at different distances from the hooked plate.

[Printed, 6d. Drawing.]

A.D. 1857, April 23.—N° 1142.

HECHT, SOLOMON PHILIPP.—(*A communication.*)—(*Provisional protection only.*)—"Improvements in the manufacture of moulds "for making fancy tobacco pipes and other ornamental articles "from plastic materials." Instead of employing moulds "made "of copper, iron, steel, or other hard substances cut or cast to a "certain design or figure," the inventor uses "soft materials "consisting of fusible metals or alloys of metals, such as tin, lead, "zinc, bismuth, antimony, and quicksilver, and Darcet's fusible "alloys," by which means he can give to the articles cast "a "correctness and finish unattainable by the present mode."

[Printed, 4d. No Drawings.]

A.D. 1857, May 1.—N° 1229.

HAWKES, EDWARD.—"New or improved machinery for the "manufacture of pipes for smoking." The machinery consists of three distinct parts.

1. A table, moving in slides on the bed, travels under two rollers to which "a stream of properly tempered clay passes" from a hopper. The rollers are geared together, and the table is carried along by toothed wheels (on the axis of one of the rollers) which engage in racks. The rollers "are not truly cylindrical," and the table "is not flat," so that the sheet of clay formed by their action comes forth with a somewhat conical head.

2. The sheet passes between a roller and a table having each suitable indentations, so that the sheet "is divided transversely "and formed into a series of blanks or rolls similar or nearly "similar in form to those from which pipes are made." There are toothed wheels on the axis of the roller which engage in racks on the edge of the table and carry the table along the bed. Instead of a table and roller a pair of rollers are sometimes employed suitably indented for dividing the sheet. The blanks thus obtained "are next wired in the ordinary manner."

3. Each pipe is finished in a pair of moulds "situated in a press "nearly resembling the ordinary press." The moulds with a pipe inside being placed in position, the handle is turned so as to

drive home the screw and force down the plunger and die, the latter of which enters the moulds and forms the interior of the bowl. To keep the moulds closed a spindle, parallel to the screw and geared to it, descends at the same speed and raises the ends of two levers; these communicate their motion through links to a plate which acts upon the moulds. A spring is interposed between the moulds and the plate, and a roller working between the lever ends serves to produce "uniform pressure along the whole length of the plate."

[Printed, 10*d*. Drawings.]

A.D. 1857, May 6.—N^o 1281.

SEMPLE, MATTHEW.—"An improved pipe tube or stem." This tube is made with a reservoir (for receiving the essential oil) "formed in one piece with the tube." The patentee prefers "to manufacture such tubes in glass and to make the mouth-piece flat in order to suit the lips;" and he recommends that a piece of muslin be put by way of filter over the pipe stem before introducing it into the tube. The tube may be used for a cigar.

[Printed, 6*d*. Drawing.]

A.D. 1857, May 18.—N^o 1396.

PULVERMACHER, ISAC LOUIS.—(*Provisional protection only.*)—"Improvements in pipes or tubes for smoking." The tube for holding the tobacco "is formed at bottom with a cutting edge to enable it to be readily and easily charged," and "on the top of this tube is the bowl, or that part substituted for the bowl of an ordinary pipe." The bowl is cylindrical, conical at bottom, formed with a rim for uniting it to the tube, and immediately above the rim pierced with holes all round to allow of the passage of the smoke; on the top is placed a wire guard or cover. In the bottom of the tube "a series of telescopic tubes and screws, or a simple screw, or other equivalent," is inserted, "connected to a hollow stem, through which passes a rod for communicating motion to the screw." When the tube is charged and the screw placed therein, there is put "over the whole length of the tube a paper or other porous cylinder or case, the upper end of which covers the apertures" in the bottom of the bowl, and the lower end "covers a mouth-piece previously slid over the hollow stem." Between the mouth-piece and stem there is "a space all

"round to allow of passage of smoke," which thus comes through the holes in the bowl, outside of the tube, and between the tube and the case. Sometimes the bowl is hinged to the tube, so that the tube "may be charged from the top." Instead of tobacco a cigar may be put into the tube "between the perforated cylinder and the mouth-piece."

[Printed, 4d. No. Drawings.]

A.D. 1857, July 10.—N° 1919.

PULVERMACHER, ISAC LOUIS.—"Improvements in pipes and tubes for smoking." This invention, for which provisional protection was granted on May 18th 1857, No. 1396, consists in improvements on an invention for which letters patent were obtained by the patentee on December 4th 1852, No. 964. A description of the pipes will be found in Abridgment 1396 of the present year, and we are now informed that "a rack and pinion for raising the tobacco" may be employed instead of a screw.

The patentee applies his invention "to ordinary pipes or pipes of the form generally adopted:—"The bowl is formed with a channel (one or more) "made in the thickness of the side," which communicates by an oblique aperture near the top with the lighted tobacco, by an aperture lower down with the stem, and by another at top "with the atmosphere," the last being closed by a stopper carrying a guard or cover. In the bottom of the bowl is fitted "a propelling apparatus" worked from the outside "for the purpose of raising the tobacco to the necessary point for the smoke being drawn down the sides of the bowl." The channel is prolonged beyond the lower aperture; sometimes it is continued to the bottom and closed by a stopper. Instead of a channel there may be fitted into the bowl a cup, "bell-mouthed at the upper edge" and perforated at the bell-mouth; there must be a space left between the cup and the sides of the bowl, room at bottom for the working of the propeller, and the space must communicate with the stem. There are several sorts of propelling apparatus described; the simplest is a screw which passes through the bottom of the bowl and carries at top a "disc or tobacco carrier;" all are composed of a screw and disc, the difference consisting in the method of working the screw.

There are described also two modifications of the pipe; in the first, the lower portion of the lining cup is of less diameter than

the upper, which "fits the bowl tightly." Apertures are made at the commencement of the narrower portion, and "the line of the "lighted tobacco" must "never be below the apertures." The propelling apparatus is modified "to furnish a receptacle for the oil "outside of the bowl." The second is a smoking tube, "having "somewhat the appearance of a cigar or cigarette;" this acts upon the same principle; the tobacco is thrust forward by a propelling apparatus, and the smoke is drawn through apertures up between tubes.

[Printed, *8d.* Drawing.]

A.D. 1857, September 17.—N^o 2412.

HACK, GEORGE FREDERICK.—(*Provisional protection only.*)—"An improved cigar tube or holder for smoking cigars or tobacco." A spiral or other spring is fitted within a tube of sufficient length to hold the cigar or tobacco, "which being lit at the end of the "tube is kept at that point by the pressure of the spring until "consumed." The top of the tube is "elongated by a mouth-piece," and the bottom has "a wire gauze, perforated or other "lid or cover," through which the cigar or tobacco can be lighted. The tubes may be of various sizes and materials, and the mouth-pieces may be variously constructed.

[Printed, *4d.* No Drawings.]

A.D. 1857, November 24.—N^o 2937.

SCHLOSS, JOSEPH.—"A so-called Diana lock, or improved "fastening." This fastening, named Diana "from the upper "part of its tumbler or trigger plate having the shape of a half-moon," may be worked by hand for bolting only, or by key for bolting and locking; it is applicable to various articles, but it is "calculated chiefly for small portable articles," such as cigar cases, pocket books, &c. Its chief parts, independently of the case, are (1), a trigger plate, having a suitable opening for a key; a cam, "which is to be worked upon by another part of the "lock, and at its upper part a projection outside the frame;" (2) a catch spring, fixed at one end to the frame and at the other to the trigger plate, and "having a suitable bend or curve for "the catch;" (3) a bolt plate inside the case and below the key-hole, resting "upon a small rod or otherwise," and having two *horizontal slots*, a "notch for the working of the key," and a

cam corresponding to the cam of the trigger plate; (4) a plate carrying two pins which enter the slots of the bolt plate, "for working the same in a straight line;" (5) a catch on the opposite side of the frame.

The bolting takes place by pressing the two parts of the frame together; the unbolting by pressing down the catch spring by means of the trigger plate.

The locking is effected "by turning the key half way," whereby the cam of the bolt plate "is brought under the cam of the trigger plate so as to render the lowering of the said plate impossible."

The bolt and trigger plates may have each two cams, one on each side of the keyhole.

[Printed, 6d. Drawing.]

A.D. 1857, December 12.—N° 3063. (* *)

PULS, FRANCIS.—(*Provisional protection only.*)—"A new combination of mineral substances for the production of artificial stone."

The artificial stone to be employed in the manufacture of grindstones, whetstones, oilstone, hones, or the like, as also of lithographic stones and stones for ornamental purposes, and as a substitute for meerschaum, consists of a combination of powdered emery, flint-glass, ruby, diamond, melted alumina, oxide of iron, or similar hard mineral substances, with proportionate quantities of lime, barytes, plaster of Paris or chalk, and silicate of potash or soda, or potash and soda powdered in solution, or in a semi-fluid state. "For production of stone for lithographic or ornamental purposes, I combine lime or chalk powder with silicate of potash or soda, or otherwise, as aforesaid, to which colouring matter may be added as required; and for meerschaum, I mix carbonate of magnesia or oxide of magnesia, or a mixture of both, with silicate of potash, soda, or otherwise, as above, to which may be added small proportions of slacked lime, chalk, or clay. Either of the above compositions may be pressed into moulds either warm or cold, to give it the required shape and render it close and compact."

[Printed, 4d. No Drawings.]

A.D. 1857, December 24.—N° 3164. (* *)

BURLEIGH, BENJAMIN, and DANCHELL, FREDERICK LUDWIG.—"Certain improvements in the manufacture of vessels

“ plates, or utensils used for domestic, sanitary, electric, and
“ manufacturing purposes.”

This invention consists in manufacturing articles for the above, mentioned purposes, of “ solidified carbon ;” amongst the articles specified are tobacco pipes.

Carbonaceous matter may alone be taken, or it may be “ rendered plastic ” by the admixture “ of moist bituminous, resinous, “ gummy, oleaginous, saccharine, glutinous, or other suitable “ cementing medium ;” it is then forced into suitable moulds (preferably by the percussive action of a steam hammer), and “ baked or burned ” in a closed vessel.

To render “ objects made of solidified carbon proof against the “ action of oxygen when exposed to fire,” they are “ coated outside with silicious ” [siliceous ?] “ glaze,” or other suitable substance.

[Printed, 4d. No Drawings.]

A.D. 1857, December 30.—N^o 3193. (* *)

HARMER, RICHARD.—“ Improvements in cigarettes.” These are “ the application of tubes or mouthpieces to cigarettes of glass, “ porcelain, pipeclay, or ceramic material,” in the manner described. The glass, &c. is “ in the form of a short tube of the size of the “ cigarette, the opening at one end of which is contracted, while “ the other end is of the full size, and receives a portion of the “ material forming the cigarette. The paper case of the cigarette “ is cemented to the exterior of the tube, and extends the length “ required for the cigarette.”

[Printed, 6d. Drawing.]

1858.

A.D. 1858, January 1.—N^o 7. (* *)

JOHNSON, JOHN HENRY. — (*A communication from Louis Charles Riattot.*)—“ Improvements in penholders, pencil cases, and “ other articles sliding in cases of a like nature,” among which articles cigar-holders are named. Supposing these improvements are to be applied to an ever pointed pencil, “ that portion of the “ holder which carries the leads, and slides inside the case, is con-

“nected by means of an internal india-rubber or helical spring with the top end of the holder;” “a stud or button, attached to one side of the slide,” “draws out the lead ready for use, and when it is drawn out it is retained in that position by means of a spring catch inside the case, which is released by simply pressing it with the nail, whereupon the internal spring instantly draws back the pencil inside the case. This internal spring may obviously be applied to all articles of a similar nature.”

[Printed, &c. Drawing.]

A.D. 1858, January 16.—N^o 79.

ROSA, EDWARD.—(*Provisional protection only.*)—“Improve-ments in the manufacture of dough and other plastic or porous substances.” The inventor, after describing his method of manufacturing dough “suitable for bread making and other uses,” adds, “the process answers also for mixing and working up other plastic substances, such for instance as are required in the manufacture of chemical apparatus, filters, tobacco pipes.”

The process is carried on “in a strong metal vessel, within which is a secondary open top chamber,” supported “clear of the bottom” of the vessel on feet, and having within it a revolving mixer actuated by a vertical shaft passed into the interior through a stuffing box in the cover of the outer vessel.” This chamber (which is partially filled with flour and water) “is disposed eccentrically to the axis of the external vessel,” and in the widest space between the outside of the inner and the inside of the outer vessel “there is entered through the top of the outer” an air or gas duct. “At this part there is also fixed a flour reservoir, so as to encircle the delivery end” of the duct. The space between the two vessels “is filled with water prior to commencing operations, when the apparatus is charged with compressed air or with gas, and the contained materials are allowed to remain under pressure until the water thoroughly absorbs the aeriform matter; after this a valve, which opens up a communication between the outer chamber and the inner one, is opened by a handle from without, and when sufficient liquid has thus been added to the flour in the inner chamber, the agitator is turned gently at first until the flour and water are properly incorporated; when properly mixed, the external cover is removed, and the dough is taken out.”

Or the flour reservoir alone may be filled with flour, whilst the inner vessel contains water; the apparatus being charged with air or gas, the flour is "shaken from the reservoir down into the inner chamber, whilst the agitator or mixer is turned."

[Printed, 4d. No Drawings.]

A.D. 1858, March 15.—N° 519.

BRIET, JULIEN DESIRÉ.—(*Provisional protection only.*)—"Improvements in pipes for smoking." An inner bowl for the reception of the tobacco is fitted into an outer bowl. A hole at the bottom of the inner bowl forms a communication with the outer one, and "the aperture leading to the pipe stem" is in the side of the outer one, "and some distance above the aperture in the inner bowl." The inner bowl may be of any material, may be either removable or fixed, "and may be applied to pipes of all kinds." Pipes thus constructed "are equally applicable to the table," as they can be made "to be smoked by two or more persons simultaneously." There may be a plug fitted into the bottom of the outer bowl, "thereby allowing the pipe to be cleansed from the essential oil."

[Printed, 4d. No Drawings.]

A.D. 1858, March 19.—N° 570.

MAY, JOHN MATTHEW.—(*A communication from Jacob Moench and Company.*)—"Improvements in fastenings for portmonnaies, travelling bags, ladies' companions, cigar, writing and instrument cases, fusee boxes, and other like cases or receptacles." This fastening consists of a bolt actuated by a helical spring, and a tube for the reception of the bolt. The bolt and spring are contained in a tube which is fixed to one side of the frame, and the reception-tube is fixed to the other side. The outer end of the bolt is provided with a knob or button, and the inner end (which projects from its tube) is bevelled. On pressing the two portions of the frame together, the bolt "will be pushed or snapped back," the tubes will become in a line, "and the bolt obeying the impulse of the spring will be shot into the tube" and "firmly secure the case." The opening is effected by drawing back the bolt out of the tube.

If the case is made with a flap, one part of the fastening is to be fixed to the flap, the other to the body of the case.

Modification :—The fastening may be arranged within the frame; the bolt has at its outer end a knob which protrudes from one end of one division of the frame, and at its inner end a stud which takes into a hook fixed to the other division; the spring is “in a recess.” The action is on precisely the same principle as that above described.

The fastening “may be within or without the case, and combined or not with a lock or other connection.”

[Printed, 6d. Drawing.]

A.D. 1858, April 8.—N^o 753.

RICHMOND, EDWARD. — (*A communication from Thomas Blanchard.*)—“New and useful mechanism for reducing, or reducing and crushing, and in various other respects treating grain, sugar cane, tobacco, or other substance.” After a description of machinery for the treatment of grain and sugar cane, we are informed that “in constructing a machine for reducing and bolting tobacco,” an endless apron or feeding belt may be employed “in connection with one or more sets of the improved mills or reducing mechanism, and one or more sieves, screens, or bolters.” The apron moves round rollers and “should be so arranged as to cause the material laid on it to be delivered to the reducing mill made with one or more sets of shears and clearers.” The shears are two series of circular metallic discs (with a washer between each disc), each series being mounted on a shaft so geared as to “rotate in the reverse direction and with equal velocity.” The peripheries (which are sometimes notched) of the discs on each shaft “pass in the spaces between the discs on the other shaft more or less.” The “eccentric clearers” are two series of plates, each of about the same thickness as a disc, and perforated with a hole “of sufficient diameter to fit over each of the washers;” the preferable form of these clearers is represented in the drawing. “When two or more sets of the reducing mechanism are employed, each set in advance of the first may be constructed so as to reduce the material to a finer state than it is reduced by the set immediately preceding,” and between each two sets there should be means of transferring the tobacco from the one to the other, and “any reducing bolting apparatus may be employed and applied so as to receive the material after it may have been reduced, and sift or separate its coarser from its finer parts.”

[Printed, 10d. Drawing.]

T.

R.

A.D. 1858, April 21.—N° 876.

HORSEY, JAMES—"Improvements in india-rubber and other pouches, and in elastic band or ring fastenings for pouches." The pouch is made with an india-rubber or elastic cover, "which being turned over that part of the pouch containing the tobacco or other material effectually protects the same." Both pouch and cover are by preference formed of india-rubber and in one piece, but the pouch may be of another material, "and the india-rubber may be in more pieces than one, cemented or otherwise held together." The shape also of the pouch may be varied. "The cover is either turned inside out, and is made to hold the pouch and its contents," or it "is doubled and fastened by a ring or otherwise, or has the portion containing the tobacco" pushed within it.

The fastening consists of an elastic ring, either of india-rubber alone, or of elastic web or cloth, with "one or more bands or tabs, by preference of india-rubber or elastic web, but they may be of leather or other material." Sometimes a split ring of metal is employed in combination with an elastic ring. A button hole or slot is cut in the tab and connected to the article by a button, stud, or its equivalent. Or the edge of the flap is bound with cloth or other fabric, and a split ring is passed "through the flap behind the binding." Or an elastic ring is permanently cemented to the flap by means of a tab fixed with dissolved india-rubber or other adhesive.

[Printed, 6d. Drawing.]

A.D. 1858, May 12.—N° 1073.

BIGGS, JAMES.—(*Provisional protection only*).—"Improved apparatus for compressing vegetable and other substances," especially for pressing tobacco. The apparatus includes (1) a mould mounted on wheels and "made with taper sides and a false bottom, to permit of its contents being readily discharged," (2) a tramway consisting of two rails attached to side standards, and turned up at their ends to prevent the mould from running off, (3) a hydraulic ram midway between the rails, and (4) a pressing block fitting the mould and suspended immediately above the ram from the cross head of the press. The mould when filled is run in under the block, "and the pump being set in action, the ram will rise and carry up the mould, compressing the substance

“ contained therein by bringing it into contact with the pressing “ block.” One person can attend to two such presses, as the filling of one mould may be effected while the other is under pressure.

[Printed, 4d. No Drawings.]

A.D. 1858, May 14.—N° 1085. (* *)

COLGATE, JOHN.—(*Provisional protection only.*)—A pipe case handle for walking sticks, canes, riding whips, and umbrellas.

A piece of ivory or hard wood is turned in the form of a handle for canes, walking sticks, &c. The handle, cut into two parts, is hollowed out to the size that will admit the bowl of a tobacco pipe. The two parts are attached by a hinge not observable, under the handle, and fastens (enclosing the pipe bowl) at the back of the handle with a catch spring, let in to form a mounting; and the handle is bored to receive the stem of the pipe. The two parts when hollowed out and attached form “ the pipe case “ handle.”

[Printed, 6d. Drawing.]

A.D. 1858, June 3.—N° 1253.

EDWARDS, HENRY.—“ An improved pipe stem or tube.” This stem, which may be of glass, porcelain, metal, or other material, is shaped “ in the form of a cornucopia or of a curved “ and cone-like form;” the end intended to be placed in the mouth is flattened or fashioned into a convenient shape, or a separate mouth-piece may be attached to it. The bowl of meerschäum, clay, or other substance is inserted into the other end and secured by a cork or other plug. Sometimes the stem is made “ with a conical or funnel-shaped partition or diaphragm ” to prevent the rise of the essential oil. Sometimes a separate flexible or other tube and a mouth-piece are combined with the “ improved stem.”

[Printed, 6d. Drawing.]

A.D. 1858, September 14.—N° 2085.

GRIMES, GEORGE CHARLES.—“ Improvements in fusees and “ in the means of manufacturing fusees.” The first part of this invention relates to the manufacture of fusees composed of a head of “ paper or other matter ” and a wire stem. The paper

prepared with a slow-burning preparation and formed into sheets is cut into suitable breadths; the slips are placed side by side "resting edgewise" on a surface affixed to a sliding frame and are moved forward to a cutter. "The forms thus obtained pass "through the cutter," down a conducting tube, and into a receiver. The forward movement, &c. is effected by means of a treadle, and a spring slide removes any particles which may be left adhering to the cutter, while any waste pieces fall out by an opening. The forms or heads, which may be "of a disc, square, "lozenge, or other form," are placed in a frame made with rows of compartments, and are kept in position by a metal plate pierced with "small countersunk holes;" piercers are passed through the holes so as to make a hole in each of the heads, and it is preferred that they should be "formed with a conical shoulder "adapted to produce a hollow or countersunk rim or cup on the "hole." The frame is placed within another frame on the main framing "in position to have a step-by-step sliding movement "given to it to bring successively the respective rows of fusee "heads opposite the ends of wire to be passed through them." There are as many coils of wire as there are heads in each row; they are drawn from reels, conducted through guides and plates, over a table, through holes in other plates, between other guides and plates, and finally pushed through the heads "to a distance "governed by a suitable stop or stops." Cutters then cut off the length of wire pushed through the heads. The various parts of the machinery and their action are minutely described. When the frame is removed, the metal plate is taken off, a small quantity of paste is applied to the projecting ends of the wires, and when the paste is partly set, the wires are pushed farther through the heads, "so as to be flush with the outsides of them when "they are dried." The fusees are finished for use by the application of ignitable composition. If the lengths of wire "are "to have pastile composition applied to them as a head," compartments are not necessary; a sheet of thin metal, paper, or other material, "perforated to correspond with the holes for the "stems" is placed in the frame; it is "oiled or otherwise greased" on both sides, so that when the composition is applied, "such "composition may be prevented sticking to the parts of the "frame."

The second part relates to paper fusees:—the paper "is prepared in sheets of the thickness usually employed for that

“ purpose, but with one thickness only of such material extending the full size of the fusee, whilst the other extends only partially over such surface, leaving a thin and more elastic part,” which is, by preference, “ at the holding end.”

The third part relates to the composition applied to the ends of splints of wood or other material :—About 16 lbs. of whiting is mixed with 6 pints of water so as to form a smooth paste, to which is added a solution “ obtained by mixing about 2 lbs. of “ gum arabic in 2 pints of water,” also about 1 lb. of tragacanth. The ends of the splints are dipped therein, any surplus is shaken off, and they are left to dry “ with the dipped ends upwards.” They are next dipped in a composition made by dissolving about 5 lbs. of gum arabic in 14 pints of water and adding about 4 lbs. of whiting “ to every two pints of the liquor thus obtained.” When they have been dried with the dipped ends upwards, they are to be dipped several times in a pastile composition, which, by preference, has mixed with it “ rather more than the ordinary “ quantity of gum employed to combine the same;” and when dry they are tipped with ignitable composition. “ To produce “ flat heads to the splints” the ends are to be dipped into “ equal parts of the foregoing compositions mixed together,” and to be dried resting “ on an oily paper or other greasy surface;” the pastile & ignitable compositions are applied as before. Other “ non-cumbustible matter” may be substituted for whiting.

[Printed, 2s. 10d. Drawings.]

A.D. 1858, September 17.—N^o 2101.

WELCH, EDWARD, and BIGGS, JAMES.—“ An improved “ tobacco press.” Four standards are bolted to a bed plate, and an hydraulic cylinder is secured to the same, “ midway between “ the standards.” Attached to the standards is a railway, whereon an iron box or mould, mounted on wheels, travels. The standards, at their upper ends, are bolted to a cast-iron plate, to which is fastened by screw bolts a block, “ formed to fit the mould loosely,” and situate “ immediately above the ram” of the cylinder. The mould has a loose false bottom, and “ connected to the front of “ the mould by a link” is a “ hooked hand lever,” whose point “ enters the mould below the false bottom through an opening “ made in the mould for the purpose of forcing up the false

“ bottom and giving the compressed material a start in the
“ mould.”

The mould when filled is pushed under the block, “ a stop
“ being provided at the end of the railway to ensure its taking
“ up a proper position ;” the ram lifts it off the railway and
forces the tobacco into close contact with the block. When the
tobacco is sufficiently compressed, the ram descends and replaces
the mould on the railway. The attendant depresses the lever, and
thereby raises the compressed cake to the upper part of the
mould.

[Printed, 10*d*. Drawing.]

A.D. 1858, September 27.—N^o 2163.

NEWTON, WILLIAM EDWARD.—(*A communication from James
W. Evans.*)—(*Provisional protection only.*)—“ Improvements in
“ cigar holders or mouth-pieces for cigars, and in pipes for
“ smoking tobacco.” A chamber or bulb is placed in the holder
or pipe stem “ at a suitable position between the cigar end of the
“ cigar holder or the bowl of the pipe and the mouth-piece.”
A piece of sponge or other substance that will absorb and hold
water is introduced into the bulb so that it “ will pretty accu-
“ rately fit and fill ” the bulb and yet allow the smoke to pass
through. There is also placed “ a diaphragm filter across the
“ bulb.”

Printed, 4*d*. No Drawings.]

A.D. 1858, September 28.—N^o 2167.

MEAD, GEORGE.—(*Provisional protection only.*)—“ Improve-
“ ments in the construction of tobacco pipes.” The bowl is
constructed with “ an internal reservoir for the reception of the
“ tobacco.” The reservoir, which is united to the bowl at the
upper part, communicates by means of an aperture at the lower
part thereof “ with a chamber at the bottom of the bowl.” The
chamber extends between the internal surface of the bowl and
the exterior of the reservoir. The pipe stem enters the upper
part of the chamber, the oil descends into the lower part, and
“ if the bowl be constructed of clay suitable for that purpose,
“ the oil will be absorbed by the bowl, thus colouring the
“ latter.”

[Printed, 4*d*. No Drawings.]

A.D. 1858, October 27.—N° 2399.

MOTT, JOHN WILLIAM.—"Improvements in pouches of india-rubber for holding tobacco or other substances." There is attached to the flap, or made in one piece with it, "an elastic band which serves to keep the flap closed by passing from side to side of the flap behind the back of the pouch." Sometimes the flap is formed "of the same shape as the front of the pouch, and has attached to it, or made in one piece with it," all round its edge an elastic rim or edge which "serves to keep the flap closed by springing over the edge of the pouch." Sometimes the top of the pouch is closed up, and in place of the opening a circular or other shaped hole is cut "in the side of the pouch under the flap." An elastic band for holding fuseses is attached to the side of the pouch under the flap. The shape of the pouch may be varied, the novelty consisting in the combination of a bag, a flap, a band or rim, and a fusee holder.

[Printed, 10d. Drawing.]

A.D. 1858, November 17.—N° 2586.

WELCH, EDWARD.—"Improvements in the manufacture of tobacco, and in apparatus therefor." A hydraulic press rests on the floor or other foundation; on the top plate of the press stands a steam chest; the head of the press is supported by wrought-iron pillars which fit into recesses in the head and top plate. The sides and door of the steam chest are of cast or wrought-iron and are formed with ribs "so as to form chambers for containing the steam," and the head of the press "is also formed with chambers in the same manner." The chambers are closed by wrought-iron plates bolted to the sides of the steam chest and press head. Each rib has an opening in it to allow steam (or hot air) to pass from one to the other; the steam enters by a pipe furnished with a stop-cock and fitted with an elbow and union joint to allow the door to be opened and closed, and the pipe which carries off the condensed steam is similarly fitted. Spun tobacco, after being cut into suitable lengths, is placed in layers on steel plates; the plates are put into the chest and steam "at a low pressure" is admitted for about six hours. The hydraulic press power is then applied for about twenty-four hours, "the top

" of the chest or chamber being made adjustable so as to permit
 " of the action of the press," and the tobacco "is fit for sale."

[Printed, 10d. Drawing.]

A.D. 1858, November 24.—N° 2663.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from G. Scriba.*)—"An improvement in cigar-cases." The case consists of an outer case and an inside pocket or pouch which is made of leather, skin, textile fabric, or other suitable material. Two recessed or corrugated plates "arranged back to back" are placed inside the pouch "and held at their sides only" thereto. The cigars lie in the recesses between them and the pouch, and are thereby "kept from rubbing together." Sometimes the case is made with "expanding flaps" which may be of elastic material.

[Printed, 6d. Drawing.]

A.D. 1858, November 24.—N° 2667. (* *)

HESS, RICHARD HENRY.—Manufacturing certain articles, among which pipes are mentioned, from certain silicates of magnesia, "such as talc, steatite, &c." These substances are reduced to a state of powder and then pressed into suitable moulds, colouring matter being added when required. "Other substances may also be added to the silicates, such as kaolin, alumina, lime, carbonate of barytes and felspar, at the option of the manufacturer." After being formed in the mould the article is removed therefrom, and baked or fired. The addition of a small proportion of glass to the material before pressing it into the mould "assists the fusing operation."

[Printed, 4d. No Drawings.]

A.D. 1858, November 30.—N° 2730. (* *)

SCHEIDEL, AUGUST EMIL CLEMENS.—(*A communication from P. F. Gouda.*)—"Improvements in fastenings for belts, braces, garters, books, portemonnaies, pocket books, invoice, writing, and cigar cases, reticules, bags, and other similar articles or purposes." On one side of the article is fixed "a holding piece" consisting of "a clip clasp, small case, or recess, slotted or with an opening on each side, or a double plate so connected as to have a groove on each side," and on the end flap or other side "is attached a frame or loop formed with cheeks, feathers, or

"tongues, or cut away at the inner sides so as to leave parts projecting inwards." The frame is attached "preferably by an elastic," and the projections "enter or slide into the slots or grooves in the holding piece" and thereby fasten the article. Modifications:—The holding piece "may be slotted through," and the frame may be formed "with a single tongue." Or the holding piece may be made "with hook-shaped pieces forming recesses," and the frame may have "on each side projections at the ends of a bar." Or the frame "may be a fixture," and the holding piece may be caused "to slide to and fro." In all cases there may be a knob "for more conveniently handling" the part which moves.

[Printed, 8d. Drawing.]

A.D. 1858, December 4.—No 2772.

LEGG, ROBERT.—"A machine for combining the operations of compressing and cutting tobacco during the process of manufacture." The tobacco leaves "after the damping process when that is employed," are drawn forward from a feeding trough between "upper or compressing rollers" and a large drum "with wooden surface blocks" forming "an endless cutting board" and through a mouth-piece; they are then cut by a descending knife and conveyed through a shoot "into any convenient receptacle." The machinery is supported by standards bolted to a base plate. The drum and a large worm wheel are mounted on the main shaft; the compressing rollers and mouth-piece are carried by blocks "sliding vertically in dovetail spaces in the standards" and acted on by a weight. The knife is fastened to a back, which is connected at one end to the driving pulley and fly wheel by a rod and crank shaft and at the other to "a horizontal hollow shaft made fast in the boss of the knife back and turning freely in bearings." On the hollow shaft is a lever "vibrating with it and imparting intermittent motion" through a pawl to a ratchet wheel on the spindle of a worm, which by suitable gearing gives motion to the rollers and causes them "to revolve in the same direction and simultaneously." The weight is composed of a number of separate plates suspended by hooks to arms which are connected to the blocks, and there is "a hand wheel and axle with chains" for raising the weight and the rollers "for any temporary purpose." The rollers may "each be carried by separate blocks," and other parts may be differ-

ently arranged "without departing from the general principle" of the invention.

[Printed, 8d. Drawings.]

A.D. 1858, December 15.—N^o 2877.

BELL, GEORGE.—(*Provisional protection only.*)—"An improvement in matches and fusees." The improvement consists "in the employment of a metal shaft" instead of the ordinary one "of wood or waxed thread or cord;" it may be dipped into "any igniting composition suitable to the purpose for which the match or fusee is intended."

[Printed, 4d. No Drawings.]

A.D. 1858, December 30.—N^o 2993.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from P. F. Varenne.*)—(*Provisional protection only.*)—"An improvement in pipes for smoking." Between the bowl and the mouth-piece a chamber is fitted, wherein is placed "tobacco, sponge, or other suitable porous and absorbent material" to prevent the essential oil, &c. from being drawn into the mouth; and as a further preventative a piece of perforated plate, wire gauze, net, "or other suitable fabric" is introduced "between the tobacco in the chamber and the mouth-piece."

[Printed, 4d. No Drawings.]

1859.

A.D. 1859, January 1.—N^o 8.

WALKLAND, JAMES.—(*Provisional protection only.*)—"An apparatus for lighting cigars & tobacco." A portable metallic box or case "is formed with indentations for the reception of any desired number of small wafers of suitable material steeped in a solution of nitre or other salt that will render them combustible without causing them to be explosive or susceptible of bursting into flame." In the middle of each wafer is a hole "bushed with a detonating compound," and in the middle of each indentation is a corresponding hole, "and through these holes a

"small rod or needle is drawn to produce ignition by friction." The case, which may be of any form, "retains the wafers in position while being used; when used they may be removed by the friction rod or needle and replaced by fresh ones."

[Printed, 4d. No Drawings.]

A.D. 1859, January 8.—N° 62.

FRIEDLAUDER, DENNY.—(*Provisional protection only.*)—"An improved smoking pipe." The bowl is connected with the stem "by inserting each into the sides of an india-rubber ball or other elastic chamber." The bowl, adapted to this improvement, has a short tube, "which is tapered to the end and cut off in a slanting direction to assist the flow of the oil therefrom;" this tube is introduced at the top or side of the ball, and the stem is "inserted in opposition," so that the ball forms a receptacle for the oil.

[Printed, 4d. No Drawings.]

A.D. 1859, January 19.—N° 165.

EVANS, THOMAS ANDREW, and RODD, WALTER JAMES HANDSCOMBE.—(*Provisional protection only.*)—"A new method of advertising." This invention consists in adapting the surfaces of tobacco pipes to the purpose of advertising, "by means of letters either raised, printed, or indented, either plain or coloured, or by placing advertisements already printed upon paper or such like material upon the bowls and stems of pipes; either by pasting, gluing, or otherwise securely fastening the same."

[Printed, 4d. No Drawings.]

A.D. 1859, January 19.—N° 168.

JOHNSON, JOHN HENRY.—(*A communication from Jacques Louis Lemaire Daimé.*)—"Improvements in apparatus for making cigarettes," and in the construction and arrangement of cigarette cases. The improvements in the first part consist (1) in making the mould of thin metal and "rather less conical" than usual; (2) in making the funnel of caoutchouc or other flexible material; (3) in splitting or cutting the paper tubes "to a certain distance at the larger end so as to form a number of tongues;" (4) in making the lower portion of the rammer head conical, in adding to the upper portion "a cylindrical part slightly hollowed, by

"applying which to the thick end of the cigarette the latter will "be effectually closed," and in marking divisions on the rammer (for the purpose of fixing the length of the cigarette) or perforating the stem for the admission of a stop pin, and (5) in inserting in the thin end of the tube a cardboard or strong paper mouth-piece "fitted internally with a perforated diaphragm." The tube is placed in the mould, the mouth-piece "is dropped into the bottom "of the mould," the funnel is inserted holding the tongues against the sides of the mould, the tobacco is rammed in, the funnel is taken out, the tongues are twisted together and slightly pressed into the cylindrical part, after which the cigarette is thrust out of the mould ready for smoking.

The cigarette case is made in two halves hinged together; one part is constructed with compartments to hold paper tubes, mouth-pieces, a mould, funnel, and rammer, the other to hold cigarettes and match box. All the articles are separately inserted into metallic bands or rings fixed securely to the bottoms of the compartments.

[Printed, 10d. Drawing.]

A.D. 1859, February 8.—N° 358.

CLARK, WILLIAM.—(*A communication from Jules Romiguiere.*)—(*Provisional protection only.*)—"Improved protectors for tobacco "plants" against the attacks of worms and insects. The protector is a pipe of baked clay similar to a drain pipe, about two or three inches in length, half an inch in diameter, and a quarter of an inch in thickness. The stalk of the plant is enclosed in the pipe, care being taken to bed the pipe about half its length in the ground. The pipe "may be removed in about fifteen or a greater "number of days, according as the plant possesses sufficient "strength to resist the attack of the worms."

[Printed, 4d. No Drawings.]

A.D. 1859, February 15.—N° 417.

ROBERTS, CHARLES LEWIS.—(*Provisional protection only.*)—"The manufacture of an improved cigar." The improvement consists in enclosing within the tip end of a cigar during manufacture a tube or mouth-piece of glass or other suitable material, "so formed as to admit of one end being readily held within the "mouth of the smoker, whilst the other is firmly imbedded in

"the cigar." The mouth-piece may be ornamented or not, or colored in imitation of amber or otherwise.

[Printed, 4d. No Drawings.]

A.D. 1859, March 2.—N° 554.

ROCHE, ETIENNE.—"Improvements in the manufacture of "paper suitable for forming cigarettes, and for other purposes, "and also improvements in the manufacture of cigars." The first process in the paper making is to "crush the ribs of the "leaves, or the leaves of tobacco in their own juice by means of "rollers." Then follow "the ordinary processes, either by hand "or by machinery," with this precaution, that if the quality of the material is not sufficiently fibrous, there must be added to it "five, ten, fifteen, or even fifty per cent. of rag, white linen "cloth, or other similar material, without any chemical preparation, triturated in the juice of tobacco."

Or a small quantity of "paste, glue, glycerine, or gluten, and "other similar matters," may be "incorporated with the triturated materials," and paper may be made "by passing the "compound between rollers several times in succession."

The compound may be converted into cigars by either of the following methods:—1. It "may be formed in moulds of wire "cloth or other material of suitable size and shape."

2. It may be "mixed with a sufficient quantity of juice," and "be taken up in an ordinary paper mould, having only at intervals of the frame gutters of the size and depth of the cigars to "be manufactured."

3. It may be compressed "in hollow cylinders of suitable form "and size, and of which the extremities are closed by a filtering "material."

4. A cylinder may be used either grooved or plain, "turning "constantly in a trough of the form of the cylinder, embracing a "third part of its circumference." A strip of suitable size and thickness is introduced "at the front of the trough," and "it will "be rolled by the cylinder until it is discharged on the other side "of the trough."

A passage from end to end is made through each cigar "by means of a needle inserted while the material is soft, and withdrawn when it is nearly dry."

[Printed, 4d. No Drawings.]

A.D. 1859, March 2.—N^o 561.

BROWN, WILLIAM—(*Provisional protection only.*)—"Improve-
ments in the manufacture of pipe mounts or stems, cigar tubes,
"and similar articles." The mounts, stems, &c. are made "of
"the ordinary English pipe clay, in lieu of the bone, horn, or
"other substance heretofore used for that purpose." The clay is
ornamented "either in moulds or by hand to represent the pipe
"stems, mounts, or cigar tubes now in use."

[Printed, 4d. No Drawings.]

A.D. 1859, March 8.—N^o 603.

TWIGG, GEORGE.—"An improved fusee igniter for the use of
"smokers." Most of the mechanism of this igniter and the
fusee are contained in a box with a hinged lid. A spring holds
back a striker (either serrated or roughed on its under side, or
"provided with a pad of rough composition,") which is "capable
"of being advanced against the action of the spring" by aid of a
nib "connected with the spring by passing through a slot in the
"edge of the box." A similar nib, "passing through a quadrant
"slot" in the side of the box, is attached to an arm "curved
"and bent up," forming a "spring retainer for the fusee," and
keeping it in position against the inside of a "spring piece,"
whose upper end "is turned up to catch the teeth of the striker,"
when the latter is advanced sufficiently. "The adjustment of a
"sufficient length of the fusee under the striker" is effected by
raising the last-named nib and thus forcing on "a length of fusee
"equal to the traverse of the nib in the slot." The pressure of
the finger on a third nib releases the striker, whose teeth passing
rapidly over the fusee ignite it, and it will continue to burn as
long as any portion of it remains outside of the box.

Modification 1. The box is circular, and the fusee is coiled up
in it with one end protruding through a slot "the length of the
"fusee required to be protruded." A "small spring carrier"
has "its supply nib" on the edge of the box, and the striker is
"fixed on the cap or lid" which revolves upon a pin secured to
the bottom of the box. The operator, holding the box in his
left hand and pressing upon the fusee with the forefinger upon
stud, turns round the cap sharply with his right hand, "at the
"same time pressing the striker with the forefinger of the right

"hand," and so ignites the fusee. To connect the cap to the bottom the pin "is undercut to leave a slight collar at the top," over which only the larger of two loops will pass; the cap, having been passed over the head of the pin at the larger, is slipped up to the smaller "and turned about half round."

Modification 2. Two drums are employed, the inner one being capable of motion on the pin, round which a coiled spring works, having its action checked by a stud on the periphery of the inner drum meeting a stud on the bottom of the outer one. The inner drum moves with the cap, a stud on the latter engaging with that of the drum. The fusee is coiled inside the inner drum round the spring, one end protruding as before, and the striker is attached to the cap.

[Printed 8d. Drawings.]

A.D. 1859, March 29.—N^o 779.

ROBERTS, CHARLES LEWIS.—"Improvements in cigars."

During the manufacture of the cigar a tube of glass, earthenware, wood, or other suitable material, is so placed in the tip end "as to admit of one end being conveniently held within the mouth of the smoker, whilst the other is firmly embedded in the cigar." The outer end of the tube is made with a flange for convenience of holding the cigar in the mouth, and inside the tube is a "lining of straw or other absorbent substance."

The exposed portion of the tube may be ornamented or colored in imitation of amber, meerschaum, &c.

[Printed, 6d. Drawing.]

A.D. 1859, April 18.—N^o 975.

IZOD, JOSEPH.—(*Provisional protection only.*)—"A safety cigar, vesuvian, or fusee box or case." This invention consists in the employment of an india-rubber spring for closing the case after it has been opened. The case is to be made "of leather and paper, or one of them, either alone or in connection with other materials," and the inside of the inner case is to be "lined with a metallic or other substance" covering the spring. The spring is fastened at one end of the inner case "to the opposite end of the outer case."

[Printed, 4d. No Drawings.]

A.D. 1859, May 10.—N° 1173.

BELL, GEORGE.—“Improvements in matches or fusees.” The stem is made of glass, pipe-clay, or other earthenware, or of cotton or linen stiffened with gum and chalk or with other stiffening material, in order that it “may not burn through and “allow the ignited composition to fall off.” In fusees which are used for lighting pipes and cigars “by sticking the short stems “thereof in the tobacco,” the stem is made “of that fibre known “as bass or of other like strong vegetable fibre.” The igniting composition “is in every case applied by dipping in the usual “manner.”

[Printed, 4d. No Drawings.]

A.D. 1859, May 13.—N° 1202.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Anthony Bourdin.*)—(*Provisional protection only.*)—“Improvements in cooking, preserving, and drying animal and vegetable “substances.” Among the substances tobacco is mentioned, and the process “deprives it of nicotine and other injurious substances.” The tobacco is put into a hermetically-closed vessel, “and high-pressure steam, entering through a pipe furnished “with a cock, fills the vessel, and when the “preserving or drying has been effected,” issues through another pipe. The pressure of the steam is marked by a manometer, “and may be “regulated by any ordinary means.” The tobacco in the vessel “may be suspended or laid on perforated plates or grids.”

[Printed, 4d. No Drawings.]

A.D. 1859, May 26.—N° 1300. (* *)

PATRICK, HUGH WILLIAM.—“A new substance or material “to be used in lieu of ivory and other like substances.”

In preparing the new material the following substances are employed, either separately or combined in suitable proportions:—
 “Amber, Canada balsam, the Australian gum kowrie, potato
 “flour or fecula,” “meerschaum, paper pulp, calcined bones,
 “fluorate of silica, sulphide or sulphurets of mercury (vermilion)
 “or of other metals, chlorides of zinc or other metals, alkaline preparations, asbestos, fluxed or fritted colors, or finely powdered
 “pumicestone, sulphur, india-rubber, or similar gums.”

"The combinations may be effected in various ways, such as by "reducing the gums to solution or 'hard bodies' or precipitates, "or by the application of heat." Where solutions are adopted, the gums employed are dissolved in "naphtha, mithilated spirits, "chloroform or essential oils, or other suitable solvent." In this state of solution, or "in a state of precipitate," the gums are added to the above-mentioned substances or to such of them as may be necessary, the latter substances being in a state of powder, "or they may also be mixed with the gums whilst they are in a "state of fusion." When thoroughly mixed, the whole is evaporated "to a thick paste, and when at a proper consistency" it is rolled, cut, or moulded. "Where shaped or moulded, the "new material is hardened by the application of heat, and will "bear a very high polish."

This invention is (amongst other purposes) applicable to making the "mouth-pieces and mounts of pipes, and similar "applications."

[Printed, 4d. No Drawings.]

A.D. 1859, June 23.—N° 1512.

GRIMES, GEORGE CHARLES.—"Improvements in cigar or such "like lights, and in the means of producing them." The improvements relate, first, to lights which have ignitable composition applied to wood splints; these have introduced "into the composition end" wire or other metallic or non-combustible material to give stiffness and to prevent the ash from falling off. The machine for introducing the wire is worked by treadles; the wire "is conducted from a creel and suitable straightening means" through a board or plate, thence under guides and through another plate. "A traversing plate," moving to and fro in guides, has affixed upon it "spring plates," the outer ends of which are united to another plate, and to this is affixed a steel plate "which turns "downwards and is formed so as to hold on to the wire when "borne thereon." By working one of the treadles "the outer "end" of the steel plate "will first be borne upon the wire," and then "will be caused to slide, drawing the wire with it and "forcing it into the splint" which is held against guides capable of adjustment. "The amount of motion thus given" is regulated by screw stops. The cutter is worked by another treadle, and when the wire has been inserted and cut, the splint is re-

moved. All the parts of the machine, their connection and working, are fully described, but the patentee does not confine himself "to these means." The wired end is dipped into gum water to fill up any split and to secure the wire, and then is placed to dry with the wired end upwards. The gum water may consist of 2 lbs. of gum dissolved in 2 quarts of water, or of about 14 lbs. of gum and 4 gallons of water, with the addition of about 14 lbs. of whiting (or other non-combustible or slow-burning substance) to every 3 quarts of liquor. Sometimes the projecting wire is turned up into a hook "to give a better hold" to the ignitable composition; the turning up "may be accomplished in various ways."

Secondly, to making the whole stem of wire, and inserting one end into a handle of wood or other non-conducting material, or dipping the end into the white composition above-mentioned.

Thirdly, to applying to wooden splints "an under or first composition of slow combustion," made by "omitting from ordinary pastile composition the nitrate of potash, or chlorate of potash, or other active agent employed therein." Or a composition may be used "of a similar character" to that described in the Specification of Letters Patent granted to Mr. Grimes, dated September 14th, 1858, No. 2085.

Fourthly, "to applying to the holding ends of wood or other splints composition of slow combustion, applied so far that the pastile composition applied at the opposite end may come thereon."

[Printed, 10d. Drawing.]

A.D. 1859, July 22.—N° 1720.

BELL, SAMUEL ALEXANDER, and BLACK, JOHN.—"An improved manufacture of fusee," which retains the burning ash on its stem and prevents the heat from being communicated to the fingers. The stem is of wire; it is tipped with pastile composition, "which is touched with a phosphorous compound capable of igniting by the application of friction;" the other end is coated with a non-conducting composition, which may consist "of a mixture of liquid gum or glue, and whiting or flour, or their equivalents." Or the non-conducting composition may be applied at the tip end (instead of at the other end) prior to the application of the pastile, "carrying it down somewhat below that composition." To secure a good holding the tip is con-

structed "with a solid head," or is flattened out or otherwise shaped "so as to form a retaining shoulder."

[Printed, 6d. Drawing.]

A.D. 1859, July 23.—N° 1723.

HARROP, HORATIO NELSON, jr.—(*Provisional protection only.*)—"Improvements in a cigar lighter and fusee box." The box is divided into two compartments with a separate lid to each; the one contains fusees, the other "a roughened serrated disc" worked by thumb and finger "through the medium of a small shaft" in connection with it, "the said shaft conveniently protruding outside of the box." The lid or other part of the latter compartment has in it an aperture "conveniently situated for the purpose of inserting the end of the cigar to be lighted." A fusee is placed "in a small slot or notch inside of the box," the lid is closed upon it, "thereby retaining such fusee tightly in a position to be acted upon by the roughened disc," and the disc, "being pushed forward with a partial turn by thumb and finger into contact with the fusee," immediately ignites it, "thereby lighting the cigar."

[Printed, 4d. No Drawings.]

A.D. 1859, July 27.—N° 1745.

BLUM, CHARLES LOUIS.—(*Provisional protection only.*)—"A mechanical apparatus for smoking and colouring pipes." The object of this invention is "to save the smoker the disagreeable trouble of preparing a new pipe, and further to give the pipe a more regular colour." The mechanism is contained in a case, the upper part of which is attached to the lower by a latch. Within the case are (1) a clock movement (wound up by a key) giving motion to a cam wheel; (2) a lever for stopping the movement; (3) bellows of leather, india-rubber, or other material, for exhausting and discharging; (4) two levers (on which the cam acts) "jointed vertically" to work the bellows; (5) a plug fixed to one of the jointed levers; "it projects on the exterior, and is worked in a groove" made in the upper part of the case; (6) a cam "which stops the plug" in such way "as to give more or less room and to furnish an exhaustion and discharging of the bellows more or less free, so that the pipe may be smoked with more or less rapidity;" and (7) a conductor

through which the smoke passes from the pipe into an upper reservoir. In one side of the case is a tube furnished with an adjusting piece of india-rubber in which the stem of the pipe is fixed air-tight; and on the top is a smoke escape provided with a valve.

[Printed, 8d. Drawing.]

A.D. 1859, August 10.—N° 1850.

TEMPERTON, THOMAS ATO.—(*Provisional protection only.*)—"Improvements in pipes for smoking tobacco." To prevent the oil from ascending the stem a reservoir is made at the bottom part of the bowl, which is "a little longer than in the ordinary pipes," and a perforated bottom is placed therein to form a separation between the tobacco and the reservoir. The oil is removed "by withdrawing a plug." Or a reservoir may be formed in the stem; but in either case it must be "below the tobacco."

[Printed, 4d. No Drawings.]

A.D. 1859, August 22.—N° 1919.

TALBOT, the Honourable WILLIAM.—"An improved cigar lighter," requiring the use of one hand only. The fusees and the mechanism are contained in a metal box, whose lid (perforated) is closed by a spring catch, and flies open on a spring hinge. The fusees are square pieces of wood or stiff paper coated on one side with an igniting composition; they are placed one on another (with the coated side uppermost) in a square chamber formed in the box "nearly the entire length thereof," and under them is a helical spring; the uppermost fusee "is arrested by a stop." Immediately over the chamber is "a spring the width of the box;" one end is fastened "to one of the narrow sides of the box;" the other end "is bent downwards" and serrated or roughened, and "rests upon an inclined surface, the lower end of which is on a level with the bottom of the uppermost fusee." A metal plunger, kept back by a spring and pushed forward by a stud, completes the mechanism. The operator pushes the plunger forward; this forces the uppermost fusee on to the incline, and in its passage against the serrated edge, "thus causing the composition thereon to ignite." The plunger retires, leaving the fusee behind, and the operator presses on the spring catch, when the lid flies open, "and he proceeds to light his cigar."

The other fusees are protected "by the descent of the friction spring."

Modification preferred by the patentee "as being more certain in its action":—The fusees are placed in "compartments formed across the periphery" of a wheel whose axis works in holes in the case, the depth of each compartment being somewhat less than the thickness of a fusee. A ratchet wheel is fixed to one side of the wheel, the points of the teeth coinciding "with each of the dividing pieces," and the plunger advances the ratchet one tooth at a time. The case is hinged at one side "for access to the wheel;" there is a hole at top for filling the compartments and "for introducing the end of a cigar," and a receptacle below for reserve fusees. The friction spring is similar to the one before described, and the slot along which the stud of the plunger moves is of the same length as the distance from tooth to tooth.

[Printed, 10d. Drawing.]

A.D. 1859, September 9.—N° 2061.

CARPENTER, FREDERICK.—(*Provisional protection only*).—

"An improved apparatus for cutting tobacco," intended chiefly "for the use of smokers to cut their own tobacco." Inside a box and against one side a cutting edge is screwed, and a knife or shear is pivoted to one end thereof. On the outer end of the shear is a projecting pin, and a spring fitted inside the box acts on the under side of the pin and keeps the shear raised. A lever, one end of which is free to move on a stud fixed in the box, rests on the top of the pin, while the other end "is bent up and terminates in a button or cross head outside." An aperture for the introduction of the tobacco is cut in the side of the box, and one side and the bottom may be made to slide for getting at the interior and for removing the cut tobacco. "A guard or guide in the shape of a metal wire or plate is fixed to cause the shear to descend properly with respect to the cutting edge;" the cutting is effected by pressing down the lever, and the spring "performs the return stroke." Sometimes the bent lever is dispensed with by prolonging the pin and working it from the outside of the box; "a slot is formed in the side of the box to allow the pin to move in."

[Printed, 4d. No Drawings.]

A.D. 1859, October 12.—N° 2319.

HELY, ALFRED AUGUSTUS DE REGINALD.—“Improvements
“ in the manufacture of tobacco for smoking purposes.” This
invention consists in making up tobacco leaf or combined leaf
and stalk or cut tobacco into rolls (by preference) from one to
two inches long, and from half an inch to one inch broad, so that
each roll shall form a charge for a pipe. Long rolls may be made
by spinning or rolling, or by both processes combined, and after-
wards divided into short rolls. Or rolls may be made “of double
“ length with both ends taper, and then cut in two;” or they
may consist of tobacco shreds or cuttings enveloped in a leaf of
tobacco or other substance; or of tobacco leaves or cuttings
“ held together by any cohesive medium or by pressure,” care
being taken “to leave passages for the air-draught through the
“ same.”

[Printed, 4d. No Drawings.]

A.D. 1859, October 24.—N° 2427.

BERTRAND, AUGUSTE CONSTANTIN.—(*Provisional protection
only.*)—“Improvements in the manufacture of herbal cigarettes.”
The ingredients are “the leaves of the walnut tree, wild aster (or
“ daisy), roses, mint, serpillum, and melilot (or sweet trefoil).”
These are to be mixed together “in a combination of two, three,
“ or more, as may be required to suit the taste; they are then
“ to be enclosed in a piece of vegetable paper formed of walnut
“ or other suitable leaves colored in imitation of tobacco.”

[Printed, 4d. No Drawings.]

A.D. 1859, November 1.—N° 2493.

DE BARY, ROBERT.—(*A communication from Julius De Bary.*)—
“Improvements in machinery for the manufacture of cigars.”
With respect to this invention we propose to give the reader some
“conception of the working and mechanical construction” by
describing “the successive operations or the various stages through
“ which tobacco for the construction of cigars passes,” and to
refer him to the Specification (nineteen pages long) and to the
drawings (occupying thirteen sheets) for a detailed account of the
machinery and a modification of parts thereof, premising that there
is occasionally a difference between the Provisional and the Final

Specification. The leaves intended for the cores are put into small cases open at both ends, and are laid upon an endless band; they "are limited on each side by a regulator," and the portion of the band on which the cases are laid "is kept rigid by a board." Over this band work two other endless bands; the hinder one is parallel with the lower one, and is "drawn back" to allow of the placing of the cases. The empty cases are removed, the band is replaced in position, the tobacco moves on and is conducted by the forward band beneath a "compression plate" and a "support;" this band is "inclined towards" the lower band and compresses the tobacco in its advance. When the tobacco arrives at the end of the support, it "is cut in equal parts" by a knife and falls into a space formed by a valve and a fixed plate. On the opening of the valve the tobacco descends into an angle made by two endless elastic bands (each passing round a series of rollers), where "it is pressed by a compressor" which "imparts to it the desired form." To prevent the leaves from separating, "immediately after the up-and-down motion of the compressor commences," a covering of tobacco or paper, brought on by "endless feeding bands," surrounds them. A small roller, round which one of the elastic bands passes, and which also has an up-and-down motion, "forces the tobacco to roll itself up." The core descends constantly pressed and rolled between the bands on to another endless band, whence it is rolled over a frame furnished with a spring board; here it is pressed by a strap beneath a roller and is finally deposited in one of the notches or recesses of a sliding frame. When the frame is filled, it is removed, the cores are taken out and carried to another machine to have the outer leaf put on them.

In the wrapping machine a moveable roller "is brought into its highest position, whereby a space is formed underneath the same" by an endless elastic band, into which the core is inserted together with a wrapper "placed rather under it, and which lies spread out in a somewhat sloping direction" on a horizontal table. The roller is now brought into its lowest position, and other rollers (four in number) being put into motion, the band is drawn on, and the core is set revolving, when the wrapper will "be wrapped round the same spirally." While the process is going on, "the attendant draws the band a little fast with one hand exactly before the spot where the wrapper winds itself, and by this

“ pull upon the elastic band the windings are fastened upon one
“ another with the proper firmness.”

[Printed, 4s. Drawings.]

A.D. 1859, November 7.—N^o 2532.

BARKER, HENRY.—“ An improvement in clay, meerschaum,
“ and other pipes,” intended “ to increase the facility of draught
“ and freedom of smoking.” The improvement consists in
moulding, cutting, or otherwise forming a groove or grooves in
the interior of the bowl, extending from the mouth of the bowl
down the inside and communicating with the bore of the stem.
If the substance of the bowl is not sufficiently thick to allow of
grooves being cut or sunk therein, they may be formed by raising
ribs or projections in the bowl. The grooves may be straight,
curved, or spiral, and the invention is applicable to bowls of any
shape or material.

[Printed, 6d. Drawing.]

A.D. 1859, December 10.—N^o 2802.

DAVIES, GEORGE. — (*A communication from Messrs. Viney,
Sommer, and Hamm.*)—“ An improvement in tobacco pipes, mouth-
“ pieces, and cigar or cigarette holders.” This invention consists
of “ a cavity or chamber furnished with a hole or holes communi-
“ cating with the mouth ” for the mouth end of a pipe stem or
a cigar holder, so that the oil collected in the stem “ may readily
“ flow into the mouth and be instantly ejected.” This chamber
(which may be of any form) “ may be moulded or cast of one
“ piece ” with the stem, or “ it may be formed of a cap, screwed
“ or otherwise fitted ” to the stem ; the hole or holes may be
“ at a greater or less distance from the end,” but so arranged
“ as to be completely in the mouth of the smoker, so that the
“ juice or oil may fall behind the teeth of the lower jaw.” In
clay pipes the cavity “ may be formed in the same manner as
“ the bowl, or by the aid of a scoop or cutter when the clay is
“ sufficiently soft ; ” or it may be made in a separate piece and
subsequently attached. “ The effect of this arrangement may be
“ facilitated ” by joining the holes in the chamber “ by means of
“ a slot,”

[Printed, 6d. Drawing.]

1860.

A.D. 1860, January 11.—N° 71.

STRAUSS, ADOLPH.—“An improvement in pipes for smoking.” The object of this invention is to intercept “the oil and any other matters that may be produced in smoking tobacco, except the smoke.” For this purpose a spiral or circular brush (removeable), “made of any suitable fibre held upon silver or other wire, wood, or other suitable holder,” is introduced into the pipe stem between the bowl and the mouth-piece. The outer end of the brush “is attached to a holder,” and the mouth-piece screws on and off.

[Printed, *6d.* Drawing.]

A.D. 1860, January 12.—N° 87.

FRANKAU, SIDNEY.—(*Provisional protection only*)—“An improvement in pipes for smoking.” The pipe stem is to be made “in the form of a rifle or musket; the bowl may be of any material, and the inventor intends to name the pipe “the rifleman’s pipe.”

[Printed, *4d.* No Drawings.]

A.D. 1860, February 7.—N° 322. (* *)

CHARTROULE, PAUL.—“Iodine inhaling means and apparatus for medical purposes.” The first part of the invention consists in the use of an “iodometer,” composed of a cylindrical receiver of ivory containing a crystal tube, taper-ended, for leading the air towards the upper end of the iodine cylinder, enclosed in a small tube, and to which tube is attached a spiral little tube heated by a lamp, and “the air in passing through this tube becomes heated.” There is “a capillary tube, which receives the iodine in small cylinders, set in motion by means of a piston.” “This capillary tube has a graduated scale, the starting point of which is indicated by a circular mark, fixed to the ivory receiver; there is a bent tube, terminated by an amber mouth-piece,” from which “the vapor of iodine is inhaled.” The invention relates, secondly, to the use of iodized cigarettes which are made by mixing a salt of iodine with tobacco. This tobacco is formed into cigarettes

which are ignited and smoked in the same manner as ordinary cigars.

[Printed, 8d. Drawings.]

A.D. 1860, February 23.—N° 489.

CHARLESWORTH, WILLIAM, CHARLESWORTH, HENRY, and DUNBAR, THOMAS HENRY.—“Improvements in cigarettes.” The outside casing is “a tube formed of tobacco leaf, and to it is attached a short mouth-piece of paper, wood, or other suitable material. The case is “filled with cut or shredded tobacco, such “as is usually smoked in pipes.” The mouth-piece is made first and slipped on “to the small part of a polished steel man-“dril;” a tobacco leaf, dampened or moistened, is rolled on to the mandril and made to overlap the lower end of the mouth-piece, and the overlapping portions are secured by gum or other cement. The mandril should be “heated slightly before rolling the tobacco “leaf upon it,” and a little cotton or wool is inserted in the mouth-piece “to confine the tobacco and to filter or strain the “smoke.”

[Printed, 6d. Drawing.]

A.D. 1860, March 5.—N° 603.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Auguste Bourrel.*)—(*Provisional protection only.*)—“Improvements “in the manufacture of pipes for smoking.” The first part of this invention consists in forming the bowl and the stem in separate pieces, and in uniting them in such manner “as to “prevent any oozing out of the oil or juice produced in smoking.” The bowl is made with an aperture for the reception of the stem, and a perforation “is made from near the bottom of the inside of “the bowl” communicating with the aperture. “The stem is “not bored entirely through, but terminates in a solid plug, “which fits accurately into the bottom of the aperture,” and is held there by cement, and “an aperture is made through the side “of the stem above the solid plug, which communicates with and “forms a continuation of, though at right angles or nearly so, to “the bore of the stem.”

The second part “consists in strengthening pipes and in orna-“menting them by means of a jointed envelope or case of gold, “silver, or other metal;” the case is made in two parts united by

a hinge, and when closed may "cover the bowl and the whole or
" any portion of the stem."

[Printed, 4d. No Drawings.]

A.D. 1860, March 8.—N° 632.

LEGG, ROBERT.—(*Provisional protection not allowed.*)—"Ap-
" pliances for heating twist or spun tobacco during the process of
" pressing." "Cellular metal plates or two thin solid metal plates
" with an intervening coil of tube extending in a plane between
" them between each layer of tobacco" are employed. The plates
or coils, when arranged in a press, are connected "by yielding joints
" and stop cocks to a steam generator or other heat reservoir."
When the press is filled with alternate layers and cellular plates
or plates and coils, pressure is applied, "lightly at first;" the
cocks are then opened, and the pressure being increased, the
operation of heating "may be performed in a much less time than
" by the old method."

[Printed, 4d. No Drawings.]

A.D. 1860, March 26.—N° 785.

RENSHAW, EDWARD GREENHILL.—"A machine for cutting
" or producing from wood certain articles called 'machine lights,'
" or wood spills or lighters, used for lighting pipes and candles,
" and other similar purposes." The principal parts of this
machine are (1) a plane or cutter carrier, (2) a cutter, (3) an
arrangement for communicating a to-and-fro motion to the carrier,
(4) a frame for holding the wood to be cut, and (5) a weight for
pressing the wood against the cutter.

The frame of the machine is "securely bolted at bottom to a bed
" plate." The carrier is a metal block supported on a bracket
cast on the side of the frame; it is grooved on its under surface
so as to slide along a corresponding projection on the bracket,
or its under surface may be shaped to slide in a V-groove in the
bracket; it has a recess cut in it at an angle of 45° for the
reception of the cutter, another recess at one end for the admis-
sion of a connecting arm, and near the same end "a curved cut
" for the descent of the spills." The cutter "stands obliquely
" in a direction from back to front of the carrier, so as to lie at
" an angle of 45° to the face," and is held in position by adjusting
screws. The to-and-fro motion is communicated by the connecting

arm "attached to and deriving motion from any ordinary convenient means for the purpose." The wood frame is bolted to the machine frame, and the wood is retained in it by screws which "do not press quite tightly against the wood, but allow it a little play or oscillation when it is acted on by the cutter." The sides of the frame are bent up at right angles as lateral guides for the wood and weight. The weight is suspended by a cord, which passing over a pulley is connected to a treadle; it is steadied in its descent by a stud that travels in a guide slot at the back of the wood-frame.

"A steel plate may be attached at the side of the frame parallel with the carrier, but long enough to keep the latter from rubbing against the iron of the frame throughout its stroke."

The carrier may be arranged to carry two or more cutters, and the machine may be furnished with two or more carriers "with corresponding connections for working them."

[Printed, 10*d.* Drawing.]

A.D. 1860, March 27.—N^o 790.

HUNT, JOHN ROLFE.—(*Provisional protection only.*)—"Improvements in tobacco pipes." In meerschaum and similar pipes the stem is made in three parts, mouth piece, body, and corked piece to fit into the bowl; the corked piece screws into the body, and the screw portion is "conical or tapering upwards," so as to leave a space around it and the bore of the body. By this arrangement the oil, as it passes through the bore of the tapering portion, falls down the outside thereof into the space around it at the bottom of the body. The lower portion of the mouth-piece also is made conical.

In "cutty pipes or pipes with short clay or china or wood bowls intended to fit into tubes," that part of the bowl which is to enter the tube is formed tapering upwards "so as to leave space around such part when inserted in the bore of the tube," and the mouth-piece is formed in a similar manner.

[Printed, 4*d.* No Drawings.]

A.D. 1860, March 27.—N^o 793.

LANGSTEIN, JAMES.—"Improvements in the manufacture of tobacco pipes," whereby they are rendered "very light and possess at same time strength and the absorbent qualities

"desired." Carbonate of magnesia and pipe-clay (thoroughly dried) in about equal quantities are pulverised, sifted, and mixed together intimately. They are then formed into "a plastic mass" of a consistency suitable for moulding with water; the processes of moulding, drying, and baking are the same as in the manufacturing of ordinary clay pipes. When the pipes are thus far finished, the necessary strength is imparted to them by dipping them into "a weak solution of silicate of soda, using silicate of soda of commerce diluted with about three times its volume of water."

[Printed, 4d. No Drawings.]

A.D. 1860, March 31.—N° 839.

JABUREK, FRANZ.—"An improved pipe for smoking." A perforated disc, by preference of the same material as the bowl, is cemented into the bowl a little above the bottom thereof, so as to form a false bottom and leave a chamber below for the reception of the oil. The bottom of the chamber should be "at a lower level than the bore of the stem." As a further prevention against the oil being drawn into the mouth, a plug (preferably of cork) bored from end to end is fitted into the mouth-piece "and inserted into the stem, extending therein to any desired length;" the bore of the plug is of much smaller diameter than that of the stem, but in other respects it "completely fills up that part of the stem through which it passes." If a more rigid material than cork is employed, "a screw or other fastening should be used to keep the junction between stem and mouth-piece air-tight."

[Printed, 6d. Drawing.]

A.D. 1860, April 3.—N° 857.

SCHLOSS, JOSEPH.—"An improved plug for smoking pipes." The plug is made by preference of meerschaum or other suitable clay "in the form of an inverted cone" the top is flat, the bottom is concave; a vertical hole (or holes) is bored from top to bottom, and a lateral hole (or holes) through the lower part, so that when the plug is in the bowl the lateral one "comes in a line with the passage leading to the mouth of the smoker." A piece of sponge or charcoal may be placed in the hollow at the bottom. Sometimes the plug is made with a flange at the upper part,

and a washer of cork "or other suitable non-conducting material" is fitted under the flange. Sometimes only the top of the plug is made of meerschaum, the lower part being of cork or other material.

[Printed, 6d. Drawing.]

A.D. 1860, April 27.—N^o 1058.

WHITE, JAMES, WHITE, GEORGE, and WHITE, JOHN.—

"Improvements in machinery for pressing and cutting tobacco or other substances." The first improvement consists in the application and arrangement of a moveable table (on which the tobacco is spread) "in combination with an endless belt which is placed over the table in an inclined position so as to compress sufficiently the tobacco" as it proceeds to the cutting apparatus. The second "in a novel construction of the cutting apparatus and its combination with the mechanism," and the third in the application of a lever "by which the attendant can press or force forward the tobacco" as may be required.

The whole mechanism is carried by standards united by cross rails. The table is moved forward by means of a rack "fixed in an inverted position" underneath it and actuated by pinions. The endless belt works on rollers, and its "under part" is kept from rising by "carriers." The knife is carried by a sliding frame; this is connected to the two lower of four plates which are united in pairs by stud rods; and two cams on the "first motion" shaft "are set to act simultaneously and operate respectively" between each pair of plates. The lever turns on a centre at the back of the machine, and the extremity of one arm "terminates in a curved surface extending crosswise of the machine." The gearing employed for connecting the several parts and for working the machine and a modification of the cutting apparatus are fully described.

The machine being put in motion, the tobacco is laid on the table and carried forward being gradually compressed between the belt and the table; "it issues at the front of the machine" through an "adjustable mouth-piece" in a sufficiently dense state to admit of its being cut by the knife, "which being also in motion and its edge cutting on the surface of the table" cuts it into shreds as may be required. "When the table has moved forward a suffi-

"cient space, another table is inserted at the back of the machine, the first table being delivered in course at the front."

[Printed, 10d. Drawing.]

A.D. 1860, April 28.—N° 1081.

SOUTHORN, EDWIN.—"An improvement in or addition to tobacco pipes, and improvements in the manufacture and ornamentation of tobacco pipes." The patentee claims three improvements; an addition to the pipe stem, a coating for pipes, and a method of ornamenting pipes.

1. A tube of glass or other solid, about six or eight inches long, and about half an inch in diameter, having at each end a perforated elastic collar or disc, surrounds the pipe stem by preference at or near its middle. The tube is filled with water through a neck in its upper part, and the smoke in passing through the stem is cooled by the surrounding water. "A part, or the whole of that portion of the surface of the stem surrounded by the tube may be pricked or made with small holes so as to facilitate the dissolution of the condensed volatile matter absorbed into the clay of the pipe."

2. After the pipe has been burnt, the exterior is coated with "a solution of soluble glass," consisting of "silicate of potash or soda with such excess of potash or soda as renders the compound soluble in water." The glazed surface produced "is not affected by damp."

3. Before the pipe is burnt, "a design, inscription, or device" is transferred to the bowl or stem. The design, &c. is printed in colours on tissue paper, the bowl is moistened with water, and the design is transferred by "rubbing or burnishing." The pipe is then burnt, and the design "is indelibly fixed thereon."

[Printed, 8d. Drawing.]

A.D. 1860, May 19.—N° 1236. (* *)

NEWTON, ALFRED VINCENT.—(*A communication from George Jaques.*)—"An improved liquid preparation of tobacco." The object is to prepare "a decoction of tobacco in a highly concentrated form, to be applied to the destruction of vermin, and for the removal of cutaneous diseases from sheep and other animals." The tobacco, the strongest description preferred, is placed in a still and covered with water, and heat or steam ap-

plied, and the still is worked until a considerable portion of the liquid has distilled over with "nicotine and volatile oils which are "condensed." The liquid from the still is drawn off, and the solid squeezed for its juice; these solutions mixed are evaporated. "If necessary, to this extract is added the nicotine or volatile oils "which have been produced or separated by distillation."

[Printed, 4d. No Drawings.]

A.D. 1860, May 23.—N^o 1270.

COPE, THOMAS.—"Improvements in the treatment and preparation of tobacco." The patentee presses "shag tobacco "after it is manufactured and also shag smalls, or both of them "mixed," by means of dies and sinkers into cakes of from one to sixteen ounces each in weight, and packs the cakes "in paper "or other suitable cover that has been previously treated with "saccharine matter." By like means he presses the above tobaccos, "also cigar returns, or other scraps or fragments of "tobacco," into oblong or other shaped blocks of various weight and covers them with tobacco leaves; he then presses them again "so as to form a kind of cavendish tobacco."

[Printed, 4d. No Drawings.]

A.D. 1860, June 4.—N^o 1365.

JUCKES, JOHN.—"Improvements in pipes for smoking." The object of this invention is to facilitate the cleaning of the stem. For this purpose an aperture is made in the back of the bowl so that a small brush or some cotton threaded through a long needle may be readily passed through the bore of the stem and the aperture. When the pipe is in use, the aperture is to be stopped by a suitable plug or cover.

[Printed, 6d. Drawing.]

A.D. 1860, June 19.—N^o 1482.

CHILDS, AUGUSTUS BRYANT.—(*A communication from Albert M. Smith.*)—"Improvements in the manufacture of a portable "pocket match safe," such that "the matches will fall down of "their own weight one at a time to the bottom of the safe and "in a position so that they can be extracted singly and brought "in contact with a rough surface to ignite them without removing "the cover of the safe."

The safe is a box of any suitable material "with space " enough in thickness on the inside for one row of matches " only, and " in each end of the two parts of the box " are pieces or projections "forming an inside division for the matches to " rest on and their ends to bear against so that they will " slide down and out smoothly." Near the bottom of one end is a hole "large enough to admit of a match being pushed " through it," and in "close proximity" a rough surface for igniting. Opposite the hole is a slide whose top comes against an end of the lowest match; it is thrown back and held in place (after use) by a spring "made of metal, rubber, or its equivalent, " but generally spiral." The hole may be made smaller than the matches " so that they will not come out while in the pocket;" this is done "by turning in the edges or compressing the sides of " the safe at this point." Or the hole may be large enough for a match to pass out; in this case it is covered by a valve which is opened and closed by the spring. The cover of the box is hung on at one end.

[Printed, 6d. Drawing.]

A.D. 1860, July 3.—N° 1606.

WEBER, LIONEL EDWARD.—(*Provisional protection only.*)—"Improvements in pipes and cigar holders." The bowl of the pipe is provided with a perforated false bottom, leaving a chamber beneath for the reception of the oil. "An opening is made in " this chamber and is closed by a dish-shaped valve fixed at one " end of a key or lever, whereby the valve may be opened or " closed at pleasure by the smoker." By opening the valve air may be admitted to the chamber and drawn through the stem. "This invention may with slight modification be applied to cigar " holders."

[Printed, 4d. No Drawings.]

A.D. 1860, August 8.—N° 1910.

STEVENS, CHARLES.—(*A communication from Jules Romiguière.*)—"An improved plant protector," for the protection of the stalk of the tobacco plant; it can moreover "be adapted to field and " garden plants generally." The protector is a tube of larger dimension than those in ordinary use, and "longitudinally divided " in two pieces." The stalk of the plant "is placed between

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“ these two pieces, care being taken that the edges meet, and
 “ some days later the protector is removed horizontally, so as to
 “ injure neither the leaves nor roots.”

The protectors are manufactured as follows :—“ Two drain pipes
 “ are employed about one foot in length, and of an equal thick-
 “ ness of about $\frac{3}{4}$ ths of an inch, the inner diameter of one being
 “ $2\frac{1}{2}$ inches, and of the other $3\frac{3}{4}$ ths inches.” As soon as they are
 half dry, they are rolled on a board “ furnished with dividing
 “ threads,” namely, three small blades of steel or copper “ arranged
 “ at a distance of about 3 inches from each other and projecting
 “ about 8 lines.” They are then baked, after which, “ by giving
 “ them a slight blow they separate into four pieces, each of which
 “ forms a plant protector.” The larger pipe “ undergoes another
 “ operation immediately after the first and before the baking,
 “ being placed in a wooden receptacle of longitudinal form,
 “ similar to a bent tile for draining, in which it fits exactly.”
 Within the receptacle on each side is a small iron point “ 8 lines
 “ in length ;” these points “ effect a groove, and by causing the
 “ drain pipe to pass from the top to the bottom in the receptacle
 “ it is split in the middle, and after being baked divides in 8 pieces,
 “ thereby forming the protectors in two sections.”

[Printed, 6d. Drawing.]

A.D. 1860, August 8.—N^o 1916.

CRÉTAL, JEAN BAPTISTE.—(*Provisional protection only*).—“ A
 “ new smoking pipe.” The novelty consists “ in boring a double
 “ communication along the stem,” one extending from the mouth-
 piece into the bowl and the other from the mouth-piece “ to a
 “ place under the bowl.” The smoker thus inhales at the same
 time smoke from the bowl and air from the external hole, keeping
 stem and smoke “ in a constant coolness.”

[Printed, 4d. No Drawings.]

A.D. 1860, August 22.—N^o 2020.

JOBIN, JOSEPH, and BOLL, AUGUSTE.—(*Provisional protection only*).—“ Improvements in cigarettes and mouth-pieces, and in
 “ apparatus used in manufacturing cigarettes.” The tobacco is
 conducted on an endless cloth to “ a carding or combing appa-
 “ ratus,” by which the filaments are straightened out “ so as to
 “ form the long tobacco into a sheet,” the fine or small particles

falling underneath. The paper being cut to the proper form, and "laid upon a piece of oilcloth or leather varnished on one side," the long tobacco "is held by its two extremities," and the fine or small "is used to fill up the vacant spaces." By means of the cloth or leather it is "rolled up and pressed to the desired hardness," and afterwards "placed in a tapered or conical tube and left to dry." The cigarette being removed from the envelope, the edge of the paper is pasted or gummed, and the ends are cut "so as to expose the tobacco;" it is then placed in a press, "which gives a smooth and finished appearance thereto, and at the same time forms two small air passages therein to facilitate the burning of the tobacco." Tobacco leaves "or any kind of thin metallic foil" may be employed for the wrapper. The mouth-piece is removable, made of amber, glass, or other material, and has at the end "a tip of vulcanized india-rubber or gutta percha."

[Printed, 4d. No Drawings.]

A.D. 1860, October 3.—N° 2389.

JOHNSON, THOMAS. — (*Provisional protection only.*) — "An improved tobacco pipe." The bowl is fastened into the stem with a cork; a cavity is formed "under the centre of the bottom of the bowl containing a piece of some porous material, such as pumice stone, for absorbing the oil;" and "at the screw end of the mouth-piece" is a hollow bulb containing porous material to absorb oil "and purify the smoke." This invention "may be applied to a pipe of any material."

[Printed, 4d. No Drawings.]

A.D. 1860, October 12.—N° 2484.

BROOMAN, RICHARD ARCHIBALD. — (*A communication from Julius De Bary.*) — "Improvements in machinery for cutting and packing cigars." The cigars are laid in compartments formed in an endless chain with their pointed end against a regulator. The chain passes round a cylinder, at the side of which is a circular saw; the cigars (held by a caoutchouc endless band) are submitted to the action of the saw, and the ends cut off fall through a passage into a box. "Two other endless caoutchouc bands are led through the chain and under the cigars;" these "carry them along by degrees one after the other" to the bottom of a case.

which moves in a direction contrary to that of the chain, "the motion corresponding to the delivery of the cigars between the "two bands," and being regulated by a friction disc. "The "first row having covered the bottom" of the case, the case is brought back "by the aid of a balance lever," and (together with its frame, "on which it makes its to-and-fro motion") descends "the thickness of a cigar to make room for another layer," and so on until the case is full, when the machine is stopped, and the filled case is taken out and replaced by an empty one. The frame (which travels on wheels) is lowered "by means of a weighted lever and other appliances;" it carries on its under side a rack, "into the teeth of which a pinion takes, mounted on a shaft "carrying a bevel wheel in gear with two other wheels, receiving "motion from the main driving shaft."

[Printed, 8d. Drawing.]

A.D. 1860, October 16.—N° 2522.

FRANKAU, SIDNEY.—(*Provisional protection only.*)—"Improvements in plugs for smoking pipes." The ordinary solid, conical, or other shaped plugs are made "corrugated round the exterior circumference, which when in position comes against the bottom of the interior of the bowl." A series of grooves or projections may be made for the same purpose. The corrugations, grooves, or projections may be cut by hand or "in a machine suitably arranged for the purpose," and the plugs may be of porous clay, meerschaum, or other material.

[Printed, 4d. No Drawings.]

A.D. 1860, October 20.—N° 2565.

BERTRAND, AUGUSTE CONSTANTIN AIMABLE.—(*Provisional protection only.*)—"Improvements in the manufacture of matches "and cigar lights." The following ingredients or some of them ("according to the nature of the match to be made") are employed:—"powdered stone, chlorate of potassa, powdered wood charcoal, gum arabic, vermilion, ochre, salts of nitre, juniper berries, powdered white sugar, cascarilla, and powdered cloves." The proportions vary according to the purpose for which the matches are intended, and any kind of essence or perfume and any desired colour may be added. The boxes to contain the matches are made with a flap, "on the inside of which is laid a

" thin paste composed of amorphe phosphorus and any adhesive material, against which these matches are to be rubbed for instant ignition, any other rough surface being unavailable."

[Printed, 4d. No Drawings.]

A.D. 1860, October 31.—N° 2661. (* *)

GHISLIN, THOMAS GOULSTON. — (*Provisional protection only.*) — "Preparing, applying, and adapting certain articles of vegetable production, called eiklonia buccinalis, proteaceæ, juncus serratus, juncus trista, and amaryllideæ, to further new purposes of manufacture." No mode of preparation of either of these articles is given, but they are said to be applicable to a vast number of purposes, more especially the first-named plant, which, among other things, it is said, is to be used in cigar, pipe, and other tubes.

[Printed, 4d. No Drawings.]

A.D. 1860, November 13.—N° 2782.

HUGHES, THOMAS. — (*Provisional protection only.*) — "An improvement in spittoons." The spittoon consists of a case and basin; the case is closed at the top and sides, but open at bottom; the upper surface "is inclined in all directions towards the centre," where it has a hole through it. Within the case is the basin, "and on the under side of the case and at the upper edge of the basin provision is made for connecting or fastening the case and basin together." The sides of the case are deeper than the basin, so that they may rest on the floor. Both case and basin may be of metal, porcelain, or other suitable material.

[Printed, 4d. No Drawings.]

A.D. 1860, December 13.—N° 3058.

REYNOLDS, JOHN GEORGE. — "Improvements in coating or covering the surfaces of smoking pipes and other articles, fictile, metallic, or otherwise, to obtain ornamental and useful effects." The pipe (which by preference is made of purified pipe-clay) is coated with amber solution or with copal varnish or with a combination of the two. It is then either dried by exposure to the air "for from 10 to 14 days" in a room having a current of air right through and kept free from dust, &c., or covered up in a

metal tray and baked "for from 10 to 40 minutes" in an oven heated to "from 120° to 230° Fahr." It is next placed on a wire gauze, and the bowl is held over a "flame of gas or of a spirit lamp, or any clear flame," while the stem is either held over or passed right through the same. To make the pipe of a darker colour it is held "over the naked flame of gas uncovered by gauze," and one portion may be made darker than another by using a blow-pipe. After this another coating is applied, and the pipe is placed in an oven "and kept at a temperature of from 260° to 290°" to "burn in and amalgamate the two coats" and attach them firmly to the surface of the clay. The amber solution is obtained "by boiling amber with linseed oil and then adding turpentine thereto." As an equivalent for the amber or copal, or both, may be used "vellum size made from skins, hoofs of cattle, and the like, or fish glues," or "any gelatinous or glutinous substances generally that can be applied as a coating and afterwards fixed and changed in colour by heat." The strength of the amber or copal may be reduced by the mixture of other gum resins, but the patentee prefers to use them separately.

[Printed, 4d. No Drawings.]

A.D. 1860, December 29.—N^o. 3190. (* *)

VILCOQ, LAURENT CHARLES MARIE JOSEPH.—"Improvements in apparatus or machinery for triturating textile bodies and other substances."

The invention consists of a cast-iron drum, which has its outer surface serrated or fluted, the size, depth, direction, or rake of the flutings being governed by the speed at which the drum is driven. Beneath this drum is placed an apparatus formed of small plates placed one against the other, and serrated on the upper surface, forming a segmental arc nearly concentric with the drum. The extremity of each plate is supported by means of a link chain, and balanced by weights passing over pulleys fixed to the frame of the machine. Each plate has projections on its extremities, which fit into corresponding notches in the said chain. The object obtained by the suspension of this serrated segment is the regulation of the space between it and the exterior of the drum, so that the teeth, flutings, or projections may never come in contact. The fibrous matters to be ground are introduced on one side of the drum

by means of an endless band travelling on rollers. Another small serrated segment surrounds the drum at the point where the materials are received, and the segment is arranged so that the one end turns on a hinge, thus allowing the other to be more or less opened; a vibratory motion is given to this last segment by means of an excentric or cam on the axle. To facilitate its action on the plants, the machine is placed in a tank of water, especially when used, as it may be, to grind the leaves or stalks of tobacco.

[Printed, &c. Drawings.]

1861.

A.D. 1861, February 14.—N° 104.

HORSEY, JAMES.—“Improvements in pouches or receptacles for tobacco and other articles.” This invention is an improvement on the one for which Letters Patent were granted to Mr. Horsey, dated April 21st, 1858, No. 876. The pouch portion or the receptacle for tobacco, “whether in one or more compartments,” is made of india-rubber or other elastic fabric, and the cover is of leather attached “by solution or otherwise.” To close the article turn the cover inside out over the receptacle, “when the pouch appears made of leather.” The patentee describes a purse made in nearly the same way; and in the Provisional Specification he states, “in forming receptacles for some purposes I apply to the cover, when made wholly or partially of leather or textile fabric, a metal or other spring in order the better to secure the contents of the receptacle when closed.”

[Printed, &c. Drawing.]

A.D. 1861, January 28.—N° 222.

TWILLEY, FREDERICK HENRY, and ROMER, ALBERT.—(*Provisional protection only*).—“Improvements in tobacco pouches, purses, and other such like receptacles.” The novelty in the manufacture of these articles consists in “placing within them a thin lining of caoutchouc, while the outer covering may be formed of leather, cloth, silk, velvet, or other suitable fabric” with the addition of a flap and spring catch or other fastening. By such an arrangement tobacco will be kept moist, whereas

"percussion caps or other articles susceptible of injury from
"moisture" will be preserved waterproof.

[Printed, 4d. No Drawings.]

A.D. 1861, February 11.—N° 347. (* *)

BROOMAN, RICHARD ARCHIBALD. — (*A communication from Michel, Chominot, and Picard.*) — (*Provisional protection only.*)—"Treating the tobacco plant in order to manufacture "paper."

The object of the invention is the production of a paper of pure tobacco, whether for making cigarettes or for wrapping or enveloping, and one important point is gathering the juice which escapes through the metal cloth employed in the manufacture of the paper to apply on and enrich the pulp with its aroma.

The ribs, roots, &c., of the tobacco plant and tobacco waste, mixed or separately, are placed in a vessel which is then filled with cold water, so as to absorb the albuminous matters, nicotine, nicotianine, malate of lime, acetic acid, nitrate, muriate, and sulphate of potass, chloride and phosphate of lime. After soaking some hours the tobacco is removed and a fresh supply placed in the water. This operation is repeated until the water has become saturated and ceases absorbing the matters above named.

2. The tobacco treated as aforesaid is distilled by any ordinary means, the essential oil extracted, and carefully preserved.

3. The saturated water from the first operation is evaporated under heat down to the consistence desired, in some cases, to a resinous state which is used for coloring matter.

4. A vessel is about half filled with water to which is added, at the choice of the operator, vegetable alkali (potass), mineral alkali (soda), animal alkali (ammonia) in a liquid or solid state. The operator selects at will soda, nitrates, muriates, acetates, azotates, carbonates, and bicarbonates, borates, hydro-chlorates, citrates, oxalates, and tartrates of soda, of potass, of ammonia, of lime, or of alumina, alcohol, quick or slack lime, also the following acids,—acetic, antimoniac, azotic, boric, carbonic, citric, hydrocyanic, oxalic, hydro-sulphuric, sulphuric, tartaric, nitric, and muriatic, also the salts and crystals of soda, effervescing soda, natron salts, salts of tartar, and ammonia, sea salt, salts of nitre, of sorrel, and Glauber salts, the chlorides of soda, of potass,

of ammonia, of lime, or of alumina. When sufficiently boiled the water is run off, and the tobacco is worked until it is left in a state of pulp, which is subjected to the usual processes for converting pulp into paper.

To impart a dark colour and a strong tobacco odour to the paper it may be dipped in a liquid obtained by dissolving the resinous product resulting from the third operation in the essence of tobacco; or it may be pressed between sheets of felt saturated with the liquid.

[Printed, 4d. No Drawings.]

A.D. 1861, February 11.—N° 348.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Pierre Duchamp.*)—(*Provisional protection only.*)—"An improved "gas apparatus, intended chiefly for lighting pipes, cigars, and "cigarettes." A holder supports a burner, the passage to which (provided with a key) "extends in the form of a hollow bent tube "and terminates in the mouth of the flexible tube in communi- "cation with a gas supply pipe." A screw in the middle of the holder "regulates the extent to which the key may be opened." The minimum supply of gas "is maintained while the holder is "at rest;" but "by simply holding it up the key turns in its "seat, increases the supply, and consequently the flame." The burner is surrounded by a gallery for a chimney, "which is lower "on one side than the other," so that the pipe or cigar may be lighted more easily.

[Printed, 4d. No Drawings.]

A.D. 1861, February 12.—N° 350.

FRANKAU, SIDNEY.—(*Provisional protection only.*)—"An im- "proved cigar or pipe rack, which is also applicable for other "purposes." "Curved or round pieces of metal open at the front "and serving as clips" are fixed to a strip of sheet metal. The strip "is turned back at the edge so as to form a groove at each "side edge, and into this groove a shorter strip of metal is made "to slide freely, forming a continuation of the longer one, and is "connected to the same by a spring, so that the whole length "may be shortened or lengthened." In consequence of this spring the rack "may be put into a hat of any size;" again "it "will also hold itself between two projecting surfaces on a wall

"or on a panel of a door or cupboard between the frames." The ends of the rack may have the edges turned up," or "small cushions" may be placed at each end, and a fusee or match box "may also be made on the rack and form part of the same."

[Printed, 4d. No Drawings.]

A.D. 1861, February 26.—N° 494.

PARISH, WILLIAM.—(*Provisional protection only*).—"Improvements in the construction of tobacco pipes." The improvements consist "in introducing between the bowl and the extremity of the stem" a spherical or other shaped chamber or reservoir, and in placing in the chamber "a piece of perforated cardboard, tin, or other suitable substance, covered over with blotting paper, cloth, linen, or any other porous and absorbent surface." The chamber "is made in two halves capable of being easily separated and readily readjusted for the purpose of cleaning." The cardboard is to "regulate the passage of the smoke" and at the same time to purify it.

[Printed, 4d. No Drawings.]

A.D. 1861, March 26.—N° 756.

LUMB, SAMUEL.—"Improvements in pipes for smoking tobacco." An opening at the bottom of the bowl communicates with a removable reservoir. A passage "made within the body" of the bowl leads upwards from the reservoir into the socket which "is placed at the upper part of the bowl;" consequently, the smoke "on being drawn from the bowl passes through the reservoir, then up the side passage, and thence to the tube, and is inhaled into the mouth perfectly free from oil or juice or other deleterious matter." The bowl may be of clay, brier root, or any other suitable material.

[Printed, 6d. Drawing.]

A.D. 1861, March 28.—N° 776.

SANDERSON, JAMES.—(*Provisional protection only*).—"Improvements in travelling bags or cases, and in fittings for the same, a part of which fittings is applicable to holding cigars and other like articles." This bag "is formed with a broad base, to the sides of which the side frames are hinged." On the base

is "a frame of fittings containing on one side stationery, while
 "the side of the case corresponding with the side of the frame
 "holding the stationery is provided with a flap, which rests on
 "the end and sides of the case and forms a desk." The frame
 "carries on the opposite side all the usual articles found in a
 "dressing case," and the fittings for holding tooth and nail
 brushes are constructed "of an outer case open at both ends and
 "containing within it a second case formed with or without a divi-
 "sion in the centre, and free to slide to and fro to a given extent
 "in both directions." In order to get at the articles within it,
 "the covers for both ends of the inner case are each formed in
 "two parts hinged to the sides of the inner case in such manner
 "that on either end of the inner case being pushed so far as the
 "hinges, the two parts of the cover drop outwards." This inner
 case "is applicable for holding cigars, cigarettes, and other like
 "articles."

[Printed, *4d.* No Drawings.]

A.D. 1861, May 9.—N° 1176. (* *)

STERN, FERDINAND.—(*A communication from Siegmund Rothschild.*)—(*Provisional protection only.*)—"Improvements in fasten-
 "ings for portemonnaies, pocket-books, cigar cases, and similar
 "articles." A hook or headed projecting pin is fixed upon the
 body of the article, and a metal plate or mount (having through
 it an aperture corresponding to the hook) upon the flap. The
 plate "may be made double, and is provided with a bar which
 "may be enclosed between the two thicknesses of the plate, and
 "hinged at one end thereof." When the flap with its plate is
 brought over the hook, the hook will enter the aperture and be
 retained there "by shutting down the hinged bar which enters the
 "hook or fits over the headed pin."

The fastening may serve as a cutter for severing the ends of
 cigars; "the end to be severed being inserted for that purpose
 "in the aperture of the plate," and "the bar, which in this case
 "is sharpened to a cutting edge on one side, by its descent cuts
 "off the end of the cigar."

[Printed, *4d.* No Drawings.]

A.D. 1861, May 20.—N° 1283.

JOBIN, JOSEPH, and WEBER, JAMES.—"Improvements in
 "the manufacture of cigars and cigarettes, and in the apparatus

"employed in such manufacture." This invention relates to the making of cigars and cigarettes by mechanical means. To form the core a cast-iron box is employed provided with four screws and nuts, two cross bars, and two pressing pieces, of which one is suitably shaped for a cigar, the other for a cigarette or cheroot. The tobacco leaves are laid in the box with a pressing piece over them, strong pressure is applied by screwing down the nuts, and a core is formed ready for "the cutting machine." A frame supports the box and a driving shaft and upper shaft communicating by spur gearing. On one end of the upper shaft is an eccentric, which by means of an arm, ratchet wheel and pawl, and screw, advances the core "at intervals a sufficient distance beyond the "mouth of the box to be cut off by the action of the cutting "apparatus." The knife is fixed to "a transverse slide" capable "of horizontal motion" in a vertically sliding carriage, vertical motion being imparted to the latter, and horizontal motion to the former, from the shafts by aid of cranks and arms. When the core is cut, it falls into a small trough, and the ascent of the carriage brings down a piece, "which rolls the cut tobacco" and pushes it out of the trough on to one of the concave trays of an endless chain, "a piece of paper or waxed cloth containing "the leaf for the first covering" being previously laid on the tray. The attendant takes each core, rolls it up by hand in its leaf together with its envelope, and passes the whole through a ring "in order to prevent unrolling." After some hours, the envelope is taken off, the outside leaf "is then applied, and the "cigar finished in the ordinary way." The outside wrapper is prepared by passing it "through a rolling press in order to flatten "the web or ribs of the leaf." The movement of the carriage, rolling piece, and trough, is fully described in the Specification.

[Printed, 8d. Drawing.]

A.D. 1861, May 30.—N° 1355. (* *)

HEINEMANN, LOUIS.—(*A communication from Messieurs Stautz and Company.*)—"An improved fastening for purses, reticules, bags, "belts, bands, pocket-books, cigar, writing, and instrument cases, "and other similar purposes." On each side of the mouth of the frame is a piece of metal (termed a seat) which projects from the top surface of the mouth and over the inside edge. The seats are similar in shape and size in transverse section, although they

may be of different lengths, and when the mouth is closed they "come in a line with each other, each projecting sufficiently for that purpose over the opposite lip of the frame." A sliding hollow piece of metal (called a saddle) carrying a knob is fitted astride one seat, and "kept on the seat and steadied in its travel by means of a small pin fixed in one side of the saddle, and projecting inward so as to enter and slide along a groove or slot cut in the corresponding side of the seat." When the article is to be fastened, the lips are brought together, and the saddle is slidden along until it comes over a portion of the other seat. The saddle and seats may be of any similar shape.

[Printed, &c. Drawing.]

A.D. 1861, June 18.—No 1560.

FLEMING, WILLIAM.—"Improvements in machinery or apparatus for manufacturing snuff." The rollers are so constructed that they "do not heat during the working; they are always properly lubricated and kept up to the surface of the grooved cylinder." The mill has a central shaft "driven by bevil gearing;" the upper portion of the shaft is formed with three radial projections, which are furnished with screws and nuts to admit of the attachment and adjustment of slotted arms, "the outer extremities of which are fitted with brasses and form the collar bearings of the rollers." Internal screws are cut in the lower portion, in which are screwed "footstep bearing pieces," and "when these radial bearing pieces are adjusted in position," they are screwed up tight by "jam nuts." The spindles of the rollers are fixed, and the rollers revolve upon them; each spindle "is a cylindrical rod of malleable iron with four grooves at each end." The rollers are of cast-iron, and are "turned externally;" each has "a tubular aperture" throughout it, "and the upper and lower ends are bored to receive two deep tubular brasses," each of which "is formed with a feather longitudinally." Beyond each of the brasses each roller is turned to receive a flanged washer, and when the spindle is passed through its roller, a washer is interposed at each end between the flanged washer and the face of the bearing. The spindle is prevented from turning by screws (in the upper and lower bearings), "the ends of which pass into the grooves formed in the spindle," and at its top is "fitted a small oil cup" through the bottom of which descends

some cotton wick "to admit of the oil percolating through it to lubricate the brasses."

[Printed, *sd.* Drawing.]

A.D. 1861, August 1.—N^o 1909.

BROWNE, BENJAMIN.—(*A communication from Theodore Byron Hubbell.*)—(*Provisional protection only.*)—"An improved self-acting tap or apparatus for the convenient passage of lighted gas or other illuminating fluid or liquid, and particularly adapted for lighting cigars." One end of a "bent tube, intended to be screwed against a wall," fits into a gas pipe, and to the other end is fixed an elastic air-tight tube, two or three feet long. To the elastic tube "is also fixed a small bent tube serving as the plug of a cock, and fitting into a hole in a piece of metal constituting the seat of the cock;" this is formed with an arm, through the end of which a screw is passed, employed "to adjust the extent to which the opening in the cock is uncovered when out of use, or, if necessary, to close it entirely." A jet "is fixed into the top of the cock seat, and to the bottom thereof a handle is affixed." On lifting the cock up by the handle "the weight of the flexible tube will cause the small bent tube or plug of the cock to turn in its seat, thereby uncovering the opening therein and increasing the volume of the flame."

[Printed, *sd.* No Drawings.]

A.D. 1861, August 15.—N^o 2031.

BETHELL, JOHN.—"Improvements in the manufacture from steatite of journals, axle boxes, and bearings for machinery axles and spindles to work in, smoking pipes, buttons, crucibles, and pots for chemical and smelting purposes, and also of a lubricating compound for railway and other carriages." The patentee manufactures pipe bowls in imitation of meerschaum from blocks of steatite by simply cutting them to the forms desired; the bowls "will answer equally well either burnt or not."

Or he reduces the steatite to fine powder, and presses it in metallic dies so as to obtain the required shape; the bowl so made is placed in a crucible, "which is to be luted with clay," put into a furnace, "and kept at a white heat for two or three hours," after which it is allowed to cool gradually."

[Printed, *sd.* No Drawings.]

A.D. 1861, August 19.—N° 2058. (* *)

SMITH, WILLIAM HENRY.—“Improvements in the preparation, application, and manufacture of peat.” These are, first, “the vulcanization of raw peat, or its reduction to a homogeneous pulpy mass, by means of heat as a solvent, said heat being engendered by the direct application of steam or ordinary fuel, or induced chemically by friction accompanied by trituration.”

Second, “the vulcanization of mixed peat, or peat in combination or admixture with various acids, alkalies, ores, earths, and so forth, for the purpose of altering the colour and texture of said peat, rendering it more or less hard, dense, compact, plastic, combustible, and so forth, either by heat alone, or heat induced by and accompanied with mechanical trituration.”

Third, “the application of vulcanized peat “to various useful and ornamental purposes,” amongst others “to pipes, or ornamental articles, to take the place of wood and papier maché,” when “heated in combination with soda, gum, or oil, or water of linseed,” and moulded into suitable shape.

[Printed, 4s. No Drawings.]

A.D. 1861, August 24.—N° 2114.

- HYAMS, MICHAEL.—“Improvements in the manufacture of “smoking pipes and cigar tubes, and preparing, washing, coating, covering, or otherwise impregnating them with aromatic “substances in a solid, liquid, or aeriform state.” Ordinary pipe-clay is mixed with one or more of the following ingredients, according to the character of the pipe or tube intended to be made:—“To impart strength to the pipe” oxide of iron is used; “to render the pipe sweet” honey, treacle, sugar, or other saccharine substance separately or combined; “to get a glaze,” common salt “with or without alkaline or non-alkaline salts;” to purify the clay, carbonate of soda; “to purify or otherwise improve the pipe,” alkaline or non-alkaline salts, “excepting “carbonate of magnesia and silicate of soda;” and “to obtain “two or more of these results,” two or more of the ingredients. Either the solid substance or a solution can be used, and when an intimate mixture with the clay and water has taken place, the moulding and baking are completed in the ordinary way. “To

"impart aroma or aromatic properties to the pipe or cigar tube, "whether prepared as just described or otherwise," the outer surface is rubbed off, and the pipe or tube is boiled "in a strong solution or infusion of mixed spices, cascarilla bark, vanilla, or "other aromatic ingredients;" or it is placed on a perforated tray in a carefully covered vessel containing a boiling aromatic infusion, so that the vapour therefrom "condenses thoroughly on the pipe;" it is afterwards laid out to dry. To varnish a pipe so prepared it is coated with any suitable varnish which has been mixed with "aromatic oils or essences, or both, or aromatic substances in "powder." Pipes and tubes of other material than clay may be treated in the same manner. "It is impossible to define the exact "proportions of the agents to be added to the clay;" sometimes the patentee uses to 1 lb. of clay, " $\frac{1}{2}$ pint of water, 2 oz. of treacle, "or 2 oz. of honey, or 2 oz. of carbonate of soda (avoudupois "weight), or $\frac{1}{8}$ oz. oxide of iron." Salt "may be used in strong "solution."

[Printed, 4d. No Drawings.]

A.D. 1861, September 9.—N^o 2251.

JOHNSON, JOHN HENRY, — (*A communication from Albert Reiniger.*)—"Improvements in machinery or apparatus for making "cigars." Two machines are employed; 1, a machine "for cutting and delivering the proper charges of tobacco to be subsequently made up into cigars;" 2, "a machine for rolling such "charges inside the outer leaf."

1. The tobacco is carried forward by means of two endless bands working on rollers, "the lower one forming an endless "table," the upper one being "slightly inclined towards the "delivery end" and compressing the tobacco. On the axes of the rollers are wheels communicating with the main shaft by means of spur wheels, ratchet wheels and pawls, eccentrics and rods. "The tobacco after passing the rollers enters upon a "third endless web, which slightly compresses it and pushes "it forward into a box" provided with a lid. The box is closed by a hook and an eccentric, and the tobacco therein is separated from the rest by a knife and retained inside until the box "assumes a perpendicular position," when a lever opens the lid, and "the tobacco drops out into one of a series of troughs." During the return of the pawls a bell-crank lever, by the inter-

vention of a rod and pawl, "causes another box to advance " towards the knife, into which is deposited the proper quantity " of tobacco as before," while a pawl at the same time causes another trough to advance. The troughs "are removed as soon " as they are all filled."

2. "The essential feature of novelty" is the employment "of " a segmental or curved rolling table, upon which a piece of " webbing coated with caoutchouc seems to effect the rolling " of the tobacco inside the leaf." The core is deposited in a trough formed in one end of the table, a little further on is laid the enveloping leaf, and a little beyond that a sheet of paper, "inside which the leaf is dried" when rolled round the core. The workman depresses a treadle, which, through a connecting rod and two toothed sectors, imparts a traversing motion to rollers; these "double or fold over" the piece of webbing stretched over the table, and thereby roll the core and leaf between the folds, and the rolled cigar drops into "hooked rollers" at the opposite end of the table. The cigar is then placed in "a pair of " nippers in a small frame" to prevent the unrolling of the covering. "The rollers in the meantime are returned by the aid of a " counterweight to their original position."

[Printed, 1s. 4d. Drawings.]

A.D. 1861, October 23.—N° 2648.

KEACH, HENRY.—(*Provisional protection only.*)—"An improvement in the manufacture of segars." The tip is enveloped in a cap of metal "or other moist-resisting substance," but by preference of metal. The cap is attached "by means of an adhesive " substance, or by pressure, or otherwise."

[Printed, 4d. No Drawings.]

A.D. 1861, November 9.—N° 2821.

LOYSEL, EDWARD.—"Improvements in match boxes or cases." These boxes may be made so as to stand on their own base, or they may be combined with "vessels or boxes to hold cigars " or tobacco," with candlesticks, or with "any suitable article " of domestic utility." They are formed of "porcelain, parian, " china, or other earthenware," and of any shape or design that taste may dictate. A portion of the external surface is roughened during the manufacture "by corrugating, ribbing, or indenting

"the same with any suitable tool," and of course leaving the roughened surface unglazed. They may be furnished, if desired, with a cover. If the box is to stand on its own base it is provided with a foot; if it is to be combined with another article, it is fixed to a metal bottom piece carrying a screw which screws into a metal socket attached to the article. When combined with a candlestick, the cover may be shaped to serve as an extinguisher.

[Printed, &c. Drawing.]

A.D. 1861, November 19.—N^o 2909.

SCHLOSS, JOSEPH.—"Improvements in pouches." This invention consists in introducing into ordinary flap pouches "one or more division pieces with or without a flap." If there is to be one division piece with a flap, the edge of the piece "is cemented to the sides and bottom of the pouch, and thus separates the pouch into two compartments." In closing the pouch the division flap is turned "towards the back," and the pouch flap is brought over the other and tucked in between the division piece and the front. Several division pieces may be inserted, "all with or without, or some with and some without flaps." The pieces and flaps may be made of india-rubber or other suitable material.

[Printed, &c. Drawing.]

A.D. 1861, November 27.—N^o 2990. (* *)

CLARK, WILLIAM.—(*A communication from Joseph Schoenfeld.*)—"Improvements in the clasps or fastenings of purses, bags, portfolios, tobacco pouches, and other like articles." The fastening consists of two catches which are placed one at each side of the frame near the hinge. The catches are composed each of a spring fixed to one side of the frame and carrying "a small inclined tumbler or catch," and of a bolt on each side opposite the tumbler; the bolt enters and holds to the tumbler when closing the frame. From each hinge projects a headed pin which passes through the axis of rotation and acts upon a spring, and round one axis is a spring, "the two ends of which lodge in the interior of said frames and act so as to separate the one from the other when unlocked." Pressure on the pin heads disengages the bolts from the catches, and the spring opens the frame "automatically" and prevents its self-fastening again.

[Printed, &c. Drawing.]

A.D. 1861, December 19.—N° 3180.

BETTS, WILLIAM.—“Improvements in the manufacture of “coverings for the ends of cigars.” These coverings are stamped out of discs of any suitable soft metal, but it is more particularly intended to employ for the purpose the material known as “Bett’s metal.” A number of punches and a corresponding number of dies are required “so shaped as to stamp up the cigar tip to the “desired form from a flat disc;” the tip is transferred from one punch and die to another until it has passed through the whole row. Each machine is provided with two separate rows. The punches are carried by two plates connected by metal frames, within which two eccentrics work. The eccentrics are embraced by collars, which slide inside the frames “and accommodate themselves to the positions of the eccentrics during their revolution;” they are keyed on the driving shaft, and their rotation “imparts a to-and-fro horizontal motion to the plates.” The dies are contained in holders, and immediately in front of each row is a carriage supported by a “longitudinally reciprocating bar,” which receives a motion “equal to the distance from centre to centre “of the punches in each row” by means of eccentrics rotating between antifriction rollers. These eccentrics are carried by “two “separate cross shafts” which are geared to the driving shaft by mitre and spur wheels. A disc is dropped into a receiver immediately in front of the first one of each row of dies, and is held there until the advance of the plate causes the corresponding punch to force it partly into the die. As the punch recedes, it carries back with it the disc and places it between fingers on the carriage, and a forked “stripper plate” strips it off from the punch as the latter continues to recede. Meanwhile another disc is dropped into the first receiver, “and the carriage is slid longitudinally so as to present the partially formed cigar tip in front “of the second punch and its corresponding die.”

[Printed, 8d. Drawing.]

A.D. 1861, December 31.—N° 3273.

CRETAL, JEAN BAPTISTE.—(*Provisional protection only.*)—“A “new process for colouring smoking pipes,” so as “to give them “either the various tints and hues generally obtained by a protracted smoking, or the appearance of amber pipes, or pipes “known under the denomination of ‘laves Françaises.’” The

pipes are dipped "in a solution of alcohol, cashoe, and aloes" and afterwards put into an oven "that can be heated to 300 degrees centigrade." To colour the bowl it is dipped "in a solution of milk and caramel." The pipes when colored are varnished "with some karabe" and submitted "in an oven to a heat of 200 degrees centigrade or thereabout."

[Printed, 4d. No Drawings.]

1862.

A.D. 1862, January 6.—N° 39.

NEWTON, ALFRED VINCENT.—(*A communication from William Chevers Kneeland.*)—"An improved manufacture of cigars." The object of this invention is "to obtain a cigar from fine cut Havannah fillings and other fine cut tobacco, which will retain its original flavor and freshness until entirely consumed in smoking, and which can be furnished at a cost not exceeding that of the common cigar." Gauze tubing is employed "of silk or other inodorous material," and of "the diameter of the cigar desired to be produced." The tobacco is introduced into the tubing at one end, and when filled the tubing is cut into suitable lengths for cigars. The ends are then tied or pinched together slightly to prevent the filling from working out while the binder and wrapper (or wrapper alone) are put on by winding them "spirally around the tube towards the head" and "at the same time giving the cigar the proper shape by rolling." The end of the wrapper is fastened by any tasteless and inodorous gum that is "indissoluble in water;" the head is punctured, "the square end is cut off," and the cigar "is then ready for market."

[Printed, 8d. Drawing.]

A.D. 1862, January 20.—N° 141.

BARBAT, LÉONARD.—"A new and improved fabric applicable to the manufacture of hats, bonnets, and other like articles," among which are mentioned "cigar cases, money holders, work bags," &c. This fabric (which may be woven in the ordinary or jacquard loom) is composed, (1) both warp and weft "of horse-hair or other animal hair of a similar nature only;" (2) of animal hair "having either its warp or weft of silk, cotton, or

"other material combined with fabrics composed of other materials;" (3) "of animal hair and vegetable hair or fibre alternately or mixed." The vegetable hair is obtained from the leaves of "the lupis, the abaca, aloes, and other plants furnishing an analogous material," and both animal and vegetable hair may be dyed so as to permit "of producing stripes and designs of various forms." Sometimes a material is employed "made of horsehair, covered with a fabric of any kind or material, lined internally with a fabric of silk or other material, the three stuffs being united by paste or by stitches." A short description of making a hat is given.

[Printed, 4d. No Drawings.]

A.D. 1862, February 18.—N° 431.

CLARK, WILLIAM.—(*A communication from Pierre Duchamp.*)—(*Provisional protection only.*)—"Improvements in gas apparatus used for lighting cigars and other tobacco." The apparatus is moveable and intended for use in cigar and tobacco shops. A metal tube is fixed to a handle by means of a socket; its lower end "carries a tube of smaller diameter serving for the filtration and for the burner of the gas," and at its upper end is "a screw thread for the purpose of fixing a metal stopper therein which is slightly filed so as to allow of a small jet of gas escaping between the tube and the stopper." This stopper "has an opening at its centre carrying a rod having a valve at its lower part and a hook at the upper part." The valve "is formed of several round balls forming a weight which opens and closes hermetically the opening in the stopper," and the hook "is attached to a cord of less length than that of an india-rubber tube which encloses the whole and serves to conduct the gas."

If the apparatus is suspended, the rod "will be raised by the short cord, and consequently the balls will close the orifice in the stopper, so that the gas jet can only escape between the first tube and the screw thread of said stopper," but "if the apparatus be raised, the weighted ball valve will fall and afford passage for a larger jet of gas."

[Printed, 4d. No Drawings.]

A.D. 1862, February 25.—N° 505.

CLARK, WILLIAM.—(*A communication from Paul Ambroise Doury.*)—"Improvements in tobacco pipes." In one arrange-

ment of pipe, which the patentee terms "pipe ardennaise," the smoke "is prevented from traversing the lower layers after "escaping from the upper part." A chamber is secured within the bowl of an ordinary pipe of any form or material by means of a washer of cork or other elastic substance, leaving a space between it and the bowl. "Several rows of holes are made "obliquely in this inner lining so as not to be liable to choke "with the ashes," and to allow the smoke to pass through the space into the stem.

In another arrangement, "which is preferable as regards the "coloring of the pipe," the chamber fits closely within the bowl; on its exterior are cut annular grooves, either "inclined or "vertical," and it is perforated with holes in communication with the grooves.

[Printed, 6d. Drawing.]

A.D. 1862, February 27.—N^o 536.

SMITH, WILLIAM.—(*A communication from Lemaire Daimé.*)—"Improvements in the method of making cigarettes, and in the "apparatus and materials to be employed therein." The manufacturing apparatus, "designated a neotype," consists of a metallic tube and a rammer, the enlarged end of the former being "cut down on one side" in order to increase the "facility of "charging whilst walking or riding." The paper is made up in sheets of the requisite size and formed into a book; the "broad "part forming the overlapping pieces" is gummed or glued, "so that one edge of each sheet is secured to the next." When it is required to make a cigarette, one sheet is torn from the others and placed around the outside of the tube; "the edge "being moistened, it adheres and forms a tube or case," When the charging is finished, and the end of the case extending beyond the tube is secured, the rammer "is used to force the tobacco "into the cigarette case."

The apparatus is provided with an external case of leather or other material, which may have a pocket to hold a book of papers, a magazine for fusees, and a roughened surface for igniting them. By preference, this case is made in the shape of a purse or clasp-bag, and within it is fixed "a flat hook" for holding in place the book. "On the opposite side of the bag a pocket is provided "with an elastic band around its mouth in which the fusees may

"be carried; the rest of the bag may be devoted to holding the tobacco and the neotype," and the surface of the external plate to which the hook is riveted may be roughened for igniting.

[Printed, &c. Drawing.]

A.D. 1862, March 19.—N° 766.

MOORE, SAMPSON.—"Improvements in machinery for compressing and cutting tobacco." This invention is applicable to those machines "in which the tobacco is continuously supplied, compressed, and cut," and it consists "in giving the requisite intermittent advancing motion" to the cutting boards by a screw. The boards "are formed in detached parts with diagonal joints," and each is carried forward "by means of a driver furnished with one or more parts of nuts gearing into the screw." The tobacco is pressed upon the boards "and is carried forward in the feeder by them and an endless belt passing over a series of rollers." The mouth of the feeder which delivers the tobacco to the knife "is contracted at the sides," and the knife "is attached to the usual swan neck which is worked in the usual manner." The boards bear upon and are supported by a "fixed or adjustable iron bed" attached to the frame sides, and the inner edges of the bed are V-grooved to guide the drivers. The hindermost roller is mounted in adjustable bearings on the top framing, which are provided with side plates "to prevent the admission of tobacco or other extraneous substances to the interior of the belt," and the edges of the belt pass inside projections "cast to each side frame for the like purpose." The top framing and the bearings in which all the rollers revolve are not only adjustable, they "can also be readily detached, so that an endless belt can be put on or taken off with great facility and without disturbing the other parts." Intermittent rotary motion is given to the screw by a slotted lever on the rocking shaft of the knife; this lever imparts vibrating motion to an "elbow lever" which is connected to a "double lever" loose on the end of the screw. To the upper arm of the double lever is jointed a V-shaped catch which takes into the groove of a friction pulley fixed to the screw, and a "retaining pawl" prevents "any retrograde motion of the screw." The roller near the knife "is driven from the screw by a side shaft actuated by spur and bevel gear." Weighted

levers may be employed to give the required pressure to the tobacco; "this arrangement would allow the endless belt to rise "in case of overfeeding."

[Printed, 10d. Drawing.]

A.D. 1862, March 20.—N° 779.

BADDELEY, WILLIAM.—(*A communication from Charles Hoppe.*)—(*Provisional protection only.*)—"An improved method "of preparing tobacco for smoking and in the apparatus to be "used for that purpose." The tobacco leaves are moistened and formed into rolls by hand, and the rolls "are passed between "graduated grooved rollers, which compress them, giving the "required form and solidity." The roll thus formed is passed through a tube "in which it receives a glutinous coating," after which it is bound round with a thread or band and then dried.

[Printed, 4d. No Drawings.]

A.D. 1862, March 27.—N° 847.

TOLHAUSEN, FREDERICK.—(*A communication from Joseph Charles Toussaint.*)—"New or improved apparatus for holding "and smoking cigars and cigarettes." The holder "has the "same mouth or body as the ordinary ones," but the end which is to receive the cigar is made of two metallic ferrules, the one fitting on the other. The upper ferrule covers the under one entirely and revolves on it "backwards and forwards through "somewhat less than a quarter of a revolution," the distance being regulated by a stop pin which works in a "segmental "recess." The inner ferrule carries on its periphery four steel springs, fixed at equal distances in a groove and having each a pointed rivet at its free end. By turning the outer ferrule to the right the points are caused to protrude through corresponding holes in the inner ferrule and to "prick and retain the cigar or "cigaret at equal distances." The rivet points "should be "tempered blue," and the rubbing surfaces of the two ferrules should be well polished.

[Printed, 6d. Drawing.]

A.D. 1862, March 27.—N° 854.

DE BARY, ROBERT.—(*A communication from Julius De Bary.*)—"Improvements in machinery for the manufacture of cigars."

This invention consists in improvements on the one for which Letters Patent were granted to Mr. De Bary, dated Nov. 1st, 1859, No. 2493. The apparatus for advancing the tobacco to the knife is similar, but the mechanism for causing the rise and fall of the knife "is here replaced by two eccentrics," and an oscillating sector is substituted for the rolling machinery. The tobacco after being cut and compressed is carried on to a belt stretched over a curved sector which is "free to oscillate about a fixed point." In the belt is a pocket "into which the cut tobacco falls and wherein it is pressed by a plunger." A roller advances and folds the belt over the core, and the sector moving at the same time carries on the core with it. The thickness of the cigar is regulated by a roller placed above the belt; this roller "consolidates the tobacco as it passes under it," and the patentee attaches great importance to it, "as without it cigars of regular thickness cannot be made." The wrapper is led up by an endless band, which "through two guides, the lower of which revolves," causes the wrapper to be wound round the core. As the sector oscillates, it causes the cigar to enter pincers (of which there are three), where it remains until the sector has attained a certain position, when the cigar is deposited in one of the compartments of an endless chain, whence it may be allowed to fall or may be removed by hand.

The shaft about which the sector oscillates is connected by links with one of the eccentrics, and the endless band passes round a drum which receives motion from the sector by means of toothed gearing, a lever, and a connecting rod. The speed of the band "is generally less than that of the rolling belt," in order that the wrapper may be drawn more quickly by the belt than by the band; thus there is imparted to the wrapper "a certain amount of tension whereby it becomes rolled smoothly" round the core. The reader is referred to the Specification for a detailed account of the other parts of the machine, the improvements claimed being the eccentrics, the sector, the pincers, and the mechanism for regulating the thickness of the cigar and for keeping the wrapper in a state of tension.

[Printed, 10s. Drawing.]

A.D. 1862, April 3.—N° 949.

RICHARDS, WILLIAM ANTIL.—"Improvements in the manufacture of bags, and in fastenings and locks for bags, parts of

"the invention being also applicable to purses, cigar cases, "reticules, and other similar articles." The parts which apply to cigar cases are the manufacture and the fastening.

Manufacture:—The frame is a piece of metal bent so as to form a recess or hollow with an opening between the edges. Round the frame is placed (and cemented thereto) a tube of leather "of larger diameter than required to cover the metal." The excess of leather is forced through the opening into the recess, so that it "forms a lining to the recess." The material intended to form the body of the article has attached to its edge a cord "thicker than the substance" of the material; the cord is inserted into the recess, and the edges of the opening are forced together. Other materials than metal and leather may be employed.

Fastening:—A plate, called "the handle piece," and formed with a knob, works on an axis on the inner surface of a case, which is "fixed to one lip or side of the mouth" of the frame, but projects over to the opposite lip. This piece is shaped on the outer side in such manner as "to prevent it coming out of the case, and on the inner side to engage a catch, whilst its under surface is borne against by a spring between the axis and the outer edge. A slot is cut in the case for the catch on the opposite lip to work through. The axis "should preferably be at the same level as the top of the catch." To open the fastening the handle piece "is worked on its axis in an outward direction."

A modification "shews the fastening working within a case," the knob protruding through a slot, "in which its shank works;" then follow the words, "this is suitable for cigar cases."

[Printed, *ad.* Drawing.]

A.D. 1862, April 5.—N° 973.

SIMLICK, HENRY JOSEPH.—(*Provisional protection only.*)—"Improvements in the manufacture of Vesuvians or cigar lights." The novelty consists in placing a small tube on the splint or piece of wood of which the stem is made; glass tubing is preferred, but metal or other non-combustible material will answer the purpose. The composition being applied to the tube is prevented "dropping off when ignited."

[Printed, *ad.* No Drawings.]

A.D. 1862, April 9.—N° 1015.

MATHER, COLIN.—(*Letters Patent void for want of Final Specification.*)—"Improvements in spittoons." The outer case is rectangular or of other suitable shape, on feet or otherwise, and having a cover hinged to one side or end; within is a removable lining "with a bottom to it, but open at top." The cover is constantly drawn downwards by a spring (by preference of india-rubber), and is lifted by means of a lever which has its axis below the bottom of the case. One end of the lever projects in front of the case and "is spread out to form a treadle;" to the other end is pin-jointed a rod, which rises up through the bottom of the case and carries a friction roller at its top. The roller comes under a projection on the underside of the cover, and as the rod rises, the cover is caused to open.

[Printed, 4d. No Drawings.]

A.D. 1862, April 28.—N° 1241.

BURNIE, JOHN.—(*Provisional protection only.*)—"Improvements in tobacco pipes," whereby the oily matters "are caused to condense in the stem of the pipe and can neither be drawn into the mouth of the smoker nor flow back into the bowl." The stem, which may be of any material, "forms a moderately wide tube;" the lower portion has fitted to it or is made with "an internal tube which extends a short distance" upwards, and the upper portion is provided with "an ordinary mouth-piece," whose "tubular extremity" extends (by preference) a short distance downwards. The tube of the bowl fits into the internal tube, and within the bowl is a removable disc of perforated metal, "formed with a thin slip of metal, which is bent upwards and bent over the edge of the bowl to admit of its being lifted out, bringing with it the contents of the pipe."

[Printed, 4d. No Drawings.]

A.D. 1862, April 29.—N° 1249.

DIXON, RUFUS E.—(*Provisional protection not allowed.*)—"A smoker's pipe and tobacco pouch." This invention consists of a case for holding a pipe, matches, &c. and a pouch combined with the case in such manner that the pipe can be filled "without the use of the hands or fingers to put the tobacco in the pipe." The

case may be of any material; it "need be only of such a height " as to receive the pipe bowl upwards, and should open at about " the middle, so that when opened the bowl will be partly above " the lower part of the case and can be easily removed." The pouch is attached to the top of the case, and the top of the case " forms the bottom " of the pouch. Directly over the bowl, " the position of the pipe in the case being on its heel with the " bowl upward," is an opening in the top of the case which is closed by a slide "moved by a wire projecting from one side." By pulling out the slide "the tobacco will drop into and fill " the bowl."

[Printed, 4d. No Drawings.]

A.D. 1862, April 30.—N^o 1275.

OXLEY, JAMES.—"Improvements in apparatus for cutting and " chopping bread and other substances," amongst which is mentioned tobacco. The visible parts of this apparatus are (1) a base, (2) a cutting table with a removable top, (3) a knife jointed at each end to a link which works on a centre in the base (one link is provided with a handle), (4) an upright having in it a vertical guiding slot for the knife to work through, (5) a gauge pin-jointed to the handled link, "its forward end working to " and fro through a slot" in the upright, and (6) a feed plate screwed to a metal plate, which slides in a groove inside the table, and to which is attached a hinged catch "for the purpose of " retaining it by abutting against the edge of the table or against " a piece of metal screwed thereto." The thickness of the cut is regulated by making a screw thread on the pin which connects the gauge and link and "a corresponding internal screw in the " base of the gauge arm." The feed plate is provided with a handle at its back and with spikes in front. The table has inside it a helical spring or springs communicating with the slide, and " to allow of a long traverse of the slide with a comparatively " slight extension " of the springs, and "to compensate for their " variable power at different degrees of extension," it is proposed to connect them by means of cords or gut, fusee and barrel "both " fast on the same axis." The cord from the springs passes round the fusee, and the other, which is attached directly to the slide, is wound round the barrel. The tension of the springs is regulated by a stationary screw and a travelling nut, to which the springs are secured. The portion cut off is pushed away

by means of an inclined ridge on the blade. The gauge and "the self-acting feeding mechanism" may be dispensed with, the article to be cut "being led forward by the hand of the operator."

Modifications :—1. The end link "is replaced by an inclined "slotted bracket" which is fixed to the base or side of the table; a pin passed through the end of the knife slides in the slot, and the fulcrum of the link to which the front end of the knife is jointed "is brought nearer the front by the base plate."

2. The table "may be made to travel under the knife after each cut," and if required for chopping or mincing it "may be made to rotate." The apparatus may be worked by a treadle.

[Printed, 10d. Drawing.]

A.D. 1862, May 7.—N° 1363.

CLARK, CHARLES.—(*Provisional protection only*).—"An improved cigar tube." This invention "consists of a hollow "mouth-piece terminating in a small tube perforated, pointed, "and barbed;" in using it the pointed end is inserted "at the "end of the cigar or at the side if necessary."

[Printed, 4d. No Drawings.]

A.D. 1862, May 8.—N° 1382.

GRIMES, GEORGE CHARLES.—"Improvements in the manufacture of cigar lights, splints, matches, and tapers or vestas, "and in machinery or apparatus employed therein." The first improvement relates to "cigar lights adapted particularly for "sticking into the ends of cigars before ignition." Powdered charcoal or cascarilla or other powder is added to any ordinary pastile composition in quantity sufficient to form a "plastic composition that will admit of being rolled into a thin cake;" it is then cut into suitable shapes, which when dry have an ignitable composition applied to them. The patentee describes "a convenient method" which he adopts "to obtain uniformity "of thickness of cakes of composition" and "to cut such composition into suitable shapes."

The second "to cigar lights formed on splints :"—A strong solution of chlorate or nitrate of potash is made by mixing, say, 1½ lbs. of either with a pint of water; the ends of the splints are dipped into it one or more times, "according to the rapidity "with which the wood is required to burn away."

The third "to dipping the ends of splints upon which pastile composition is to be applied in a resinous or waxy matter," that will not readily melt at ordinary temperatures, but which, when the composition applied thereon is ignited, will "readily admit of the splint slipping out and leaving the ignited matter in or on the cigar." Common wax "answers the purpose well, but it is made harder and more suitable by the addition of a little resin or such like substance," and a little scent mixed therewith neutralises the smell.

The fourth, to substituting for wood or metal splints "cotton or other suitable fibrous material coated with wax, stearine, or other composition." A coating "which answers well" may be made of $1\frac{1}{2}$ lbs. of stearine, $\frac{1}{4}$ lb. of ordinary wax, 2 lbs. of nitrate of potash, $\frac{1}{2}$ lb. of amorphous phosphorus, and $\frac{1}{2}$ lb. of storax; or of 2 lbs. of amorphous phosphorus, 1 lb. of wax, and $\frac{1}{4}$ lb. of storax or other scent; the proportions may be "very much varied." Sometimes the cotton "is first soaked in a hot solution of nitrate of potash" composed of about 6 oz. of nitrate to a pint of water; when thoroughly dry it is drawn through the above or one composed of about 1 lb. of stearine or wax, $\frac{1}{4}$ lb. of scent, and as much nitrate as the stearine or wax will contain, "leaving it thin enough to be drawn through the plate."

The fifth, to the manufacture of tapers or vestas; this does not belong to the present series.

The sixth, "to means of cutting splints." When the splints are intended for matches and cigar lights, the cutter, instead of being formed "with cutting surfaces adapted to cut at one operation splints corresponding with the whole width of the wood to be cut," is sometimes reduced "so as to cut only a portion of the width of the wood at each operation;" for this purpose it is placed "on the extreme edge" of the slide (instead of on the middle) with its top "projecting a little above the slide." "After each series of operations of cutting through the block to a depth therein corresponding with the width of the die used, and the whole substance of the block has thereby become reduced in thickness," the block is shifted back a distance sufficient to allow of the operation being repeated until the whole of the block has been cut into splints."

The seventh, "to means or apparatus such as for which" Letters Patent were granted to Messrs. Grimes and Bell, dated *December 21st, 1854, No. 2691*, "in which bars or pins are used

"to act by their ends upon the ends of splints in a trough to push such splints into clamps." This, as well as the first part of the sixth improvement, is not included in the present series.

[Printed, 6d. No Drawings.]

A.D. 1862, May 10.—N° 1403.

CLARK, WILLIAM.—(*A communication from Jean Louis Abeilhau.*)—"The application of a vegetable fibre alone or in combination with other matters in the manufacture of felted and other fabrics, also a substitute for flock or powdered wool, and as a material for padding or stuffing, and for other useful purposes." This invention consists in utilizing the down of aquatic plants technically termed 'typha,' and commonly known as reeds or bulrushes." The down is dried and separated from the seed, after which it is purified and worked "until it possesses the fineness of silk and has a silvery appearance." Next comes the felting operation," and as the down is too short to be employed alone, "one-third or half the quantity of hares' or rabbits' hair, or it may be hair of the beaver," is added to it, and the mixture is "wrought well" with "an arçon (an instrument used in hat making)."

The patentee, after enumerating many purposes to which either the down or the felt is applicable, informs us that "the detritus" may serve for the manufacture of sundry articles, and that it may be employed "in the manufacture of tobacco."

[Printed, 4d. No Drawings.]

A.D. 1862, July 17.—N° 2047.

SCHLOSS, JOSEPH.—(*Provisional protection only.*)—"Improvements in pouches." These pouches are made of india-rubber; sometimes they are formed "with a flap cemented at the edges to the sides of the pouch, and loose or unattached all along the front end of the flap." The pouch "is narrowed towards the mouth," and the flap "causes a spring-like action" to keep itself closed.

Sometimes the pouches are made "with a single piece or flap in the form of a flat ring cemented all round, or at intervals, to the edges." To get at the contents "the edges of the ring are turned back all round, when the mouth of the pouch is disclosed and opened."

[Printed, 4d. No Drawings.]

A.D. 1862, August 12.—N° 2262.

SENGRY, CHARLES.—“An improved smoking pipe, which may “also be adapted as a tube for smoking cigars.” The stem has a mouth-piece at one end and at the other a curve downwards, to which is screwed “a hollow ball or otherwise shaped hollow “chamber.” In the upper side of the stem is an orifice, and round the stem is fitted a ferrule having an orifice corresponding to the one in the stem. “A forked or two-armed pin,” open at bottom, is fixed to the ferrule at the orifice, “so that its two arms “rise from and arch over the orifices,” and a bowl, having in it a perforated diaphragm, and at the bottom a hole surrounded by a cork or caoutchouc washer, “is fitted to the stem by the pin.” When the article is to be used as a cigar tube, the bowl is removed, and a cigar is placed on the pin. The ferrule may be dispensed with by screwing the pin into the orifice in the stem. Again the bowl may be attached to the stem “by a hollow or tubular screw “open at both ends.” Again the bowl may be a fixture if the stem is not required for a cigar tube.

[Printed, 8d. Drawing.]

A.D. 1862, August 14.—N° 2288.

PASSEY, HENRY RICHARD, and NIMAN, LOUIS.—(*Provisional protection only.*)—“An improved cigar tube or holder,” by the use of which a cigar may be smoked “without being brought in “contact with the mouth or fingers,” and may be extinguished at any time “and transferred to the pocket or travelling case perfectly enclosed in the tube.” The holder consists of a metal cylinder about three-quarters of an inch in diameter and about five inches in length, “at one end of which a funnel-shaped “mouth-piece is attached.” Inside the cylinder at the mouth of the funnel a spiral spring “tends constantly to press forward a “conical wooden ring or tube into which the tip of the cigar is to “be inserted.” The cigar is “to be pushed down into the cylinder “against the action of the spring,” and “a cap having the two “ends cylindrical and the middle portion of a conical form is to “be placed on the open end of the cylinder.” The end of the cigar will “slightly protrude through the “small open end of “the cap, and may be lighted,” the spring keeping the end constantly exposed. “Attached to the cylinder by a ring or otherwise is a chain securing a cap or extinguisher, which may be

" placed on the small open cylindrical end of the conical tube " so as to enclose the cigar. The entire holder may be of metal or other material, or partly of metal and partly of "other ordinary" substance use in the construction of cigar holders."

[Printed, 4d. No Drawings.]

A.D. 1862, September 6.—N° 2467. (* *)

RICHARDS, WILLIAM ANTIL.—" An improved fastening for purses, pocket books, bags, cigar cases, books, wearing apparel, jewellery, and other articles." One part of this fastening consists of a stud or pin notched or recessed at the sides and mounted on an ornamental plate which is fixed to the body of the article. The other part which is pinned to the flap is composed of three plates and bow springs ; of these plates the bottom and middle ones are one on each side of the flap, the material between them being cut away. The top plate slides on the middle one, and on its under side is a hollow projecting piece having in it a slot keyhole-shaped. The projecting piece is formed with lugs at its sides, it passes through an opening in the middle plate, and is prevented " from slipping away " or " unduly out of place " by springs on the plate which press against the lugs. The springs are kept in place by the pins which connect the plates, by the edge of the material of the article, and by the " bent up parts " of the projection. The bottom plate has in it an opening of the same size as the wider portion of the keyhole slot, each being sufficient for the admission of the stud. To close the fastening the sliding plate is pushed back until the opening and slot coincide, the stud is introduced, and the sliding plate is pushed forward until the edges of the narrow portion of the slot enter the recesses in the stud. The bottom plate may be dispensed with by making in the material an orifice for the passage of the stud ; the orifice may be protected by an eyelet or rim. The fastening may be rendered " more " expandable " by forming two, three, or more keyhole slots in the projecting piece and as many openings in the bottom plate. A knob or other holder may be added to the sliding plate.

[Printed, 8d. Drawing.]

A.D. 1862, September 11.—N° 2502.

CLARK, WILLIAM.—(*A communication from Joseph Schoenfeld.*) —" Improvements in cigar and cigarette cases." The case is made

of any shape, "and either rigid or collapsing; it is closed at its " lower end, and may be made of leather, cloth, or other material." The upper part or mouth "has a division, the two lips or sides " of which are furnished with small metal frames similar to those " used for purses " and are closed with any kind of fastening or spring catch. The cigars are "held endwise in the case." Instead of having the frames at one end of the case, they may be fixed at one of the sides, and "the cigars would then be with-
" drawn sideways."

[Printed, 8d. Drawings.]

A.D. 1862, September 24.—N° 2606.

POSENER, DAVID, and POSENER, ADOLPHE.—(*Provisional protection only.*)—"Improvements in the manufacture of india-
" rubber and other tobacco pouches or purses." The pocket of the pouch is of the ordinary shape, but to ensure the safety of the contents a flap is added to the mouth thereof; the outer covering is formed "by cutting out a crescent-shaped or curved
" piece therefrom in order that the pocket may be turned over, " and its bottom part inserted or pushed under the curved
" opening." For tobacco pouches it is proposed "to form a
" division in the centre of the pocket for the purpose of holding
" two different kinds of tobacco," the flap covering both compartments; or "the division may be continued in the form of a
" flap;" or the flap "may be made in duplicate for the purpose
" of covering the mouth of both pockets." For larger pouches it is proposed "to form a duplicate pocket arranged back to back,
" one having a flap, which is protected by the crescent-shaped
" opening, and the other being protected by the turning over of
" the pockets in order to insert the flap in the opening." It is advisable to make the pocket of india-rubber or of india-rubber and cloth combined; but the cover need not be of an elastic material, as it is not required to be stretched or turned inside out, "the bottom of the pocket being merely inserted under such
" piece."

[Printed, 4d. No Drawings.]

A.D. 1862, October 21.—N° 2833.

CLARK, CHARLES.—(*Provisional protection only.*)—"Improve-
" ments in cigar tubes and in cigar and pipe mouth-pieces." The

invention consists of "a hollow mouth-piece terminating in a small tube perforated longitudinally, pointed and barbed," and in using it "the pincer or pointed end is inserted at the end of the cigar or at the side if necessary." In hollowing the mouth-piece "the opening of the tube, which encircles the piercer, and into which opening the end of the cigar is intended to be partially inserted," is made "of sufficient length from the point of the piercer inwards towards the mouth end to leave an open space or cavity between the end of the cigar and the junction of the outer or cigar tube and the inner or piercer tube to intercept the oil of the tobacco." To prevent the piercer tube from splitting the cigar, it is divided, and each half is pointed and barbed. The whole may be of metal, or the piercer or inner tube of metal, and the outer of amber, ivory, glass, or other suitable material. When glass or other moulding material is employed, it is proposed "to form the inverted tube and outer tube in one, and merely insert in a cavity formed in the latter to receive it a barbed piece made of wire with a ring or expanding spring head to fit into and fix itself in the cavity of the tube just mentioned." Mouth-pieces of the latter description may be used "on the ends of pipes or for cigarettes; and cigars and cigarettes "may also be manufactured with these tubes upon them entire." The pieces may be made of other forms "and with spiral or partially spiral coils;" the two-pronged piercer "may be bent so as to form a swell to open the end of the cigar and cause it to fill the outer tube."

[Printed, 4d. No Drawings.]

A.D. 1862, November 25.—N° 3162.

CAULFIELD, WILLIAM BEARE.—(*Provisional protection only.*)—"A new kind of porous stems for tobacco pipes." A tube "of any convenient diameter" is made "of the pulp of rags or any other fibrous material, or from felt, or from paper rolled up together, more particularly from blotting paper." This tube may be used inside the stem of a pipe or as a stem by itself; it will absorb the essential oil, and when saturated can be readily replaced by a fresh one.

[Printed, 4d. No Drawings.]

A.D. 1862, December 2.—N° 3238.

SIMLICK, HENRY JOSEPH.—(*Provisional protection only.*)—"Improvements in the manufacture of cigar and pipe lights"

commonly known by the name of Vesuvian lights. The stems or holders are to be made of "spirally twisted wire or strips of metal, the coils of which are to be slightly opened or separated in order to allow of the circulation of air between the coils;" the wire or strips may be of any metal. The advantages claimed are "that the part of the light is not communicated to the extremity of the coiled wire as it is in straight holders," and "that the holder is of a springy nature, which assists materially in giving an easy friction to the combustible compound."

[Printed, 4d. No Drawings.]

A.D. 1862, December 15.—N° 3350.

HYAMS, MICHAEL.—(*Provisional protection only.*)—"Improvements in the manufacture of cigars, cheroots, and cigarettes, and in the treatment of tobacco." The object of this invention is "to prevent the noxious oils and juices of tobacco from entering the mouth." In making cigars or cheroots there is enclosed in the portion known as the "bunch" a piece of charcoal (by preference) prepared "by combining therewith tar, quartz, sand, or earth, and fire-clay." It is preferred to shape the piece suitably to the cigar or cheroot, an "egg-like form, but with ends tapering or pointed" for the former, and cylindrical for the latter; it is inserted at or near the upper end of the bunch; the leaf is then rolled over the bunch, and the cigar or cheroot is finished in the usual way.

In treating tobacco there is applied to it by sprinkling or other mode "an alkaline solution or solutions" for the purpose of neutralising the oil. The alkalies recommended are "potash and soda, and especially the soda of commerce and carbonate of potash, but ammonia and alkalies obtained from earths and other sources may be used." The following proportions will answer in many cases:— $\frac{2}{3}$ parts by weight of soda to $\frac{1}{3}$ part by weight of carbonate of potash, "taking $\frac{1}{4}$ lb. alkali to one gallon water."

[Printed, 4d. No Drawings.]

A.D. 1862, December 17.—N° 3374.

BARRACLOUGH, THOMAS CRITCHLEY.—(*A communication from Ernst Breul.*)—"Improvements in machinery for spinning, twisting, and rolling tobacco." The machinery is composed of

"one or more rectangular or other shaped revolving frames or flyers" of the following construction:—Each "is provided with two pivots," the one forming "a hollow trunnion through which the tobacco passes as it comes from the feeder," the other carrying "a pair of driving pulleys" which by aid of a band impart rotary motion to the frame. "Transversely to the revolving axis of the frame and within it" is a spindle carrying a bobbin, on which the spun tobacco is rolled up; it has its bearings in the sides of the frame "and is so arranged that it can be lifted out with the bobbin without interfering with the other parts." The bobbin is formed of sections "which when in the frame are kept apart by screws" at one end, and the spun tobacco is removed by taking out the screws and by taking off the flange of the bobbin, when the sections will collapse, "so that the tobacco becomes loosened and may be easily stripped off." Screwed to the sides of the frame are two arms, in which a shaft "cut with a double screw has its bearings;" a pin travels backwards and forwards in the screw, giving motion to a guide piece connected to a roller, "round which the tobacco passes when it comes from the hollow trunnion," thus causing the tobacco to be wound regularly upon the bobbin; the roller is supported by a shaft fixed to the arms. The spindle and screw shaft are set in motion by pulleys and guide rollers connected to a grooved pulley on the driving pivot.

There is also a drawing of "a flyer supported in a frame, together with the means of driving it from a treadle."

[Printed, 10d. Drawing.]

A.D. 1862, December 31.—N° 3488.

JAKUES, FRANK.—(*Provisional protection only.*)—"Improvements in cases, for pipes, mouth-pieces, cigars, and other analogous articles." The cases are made of "wood, hard leather, papier maché, hard rubber compound, or other suitable material," and are provided "with an elastic or spring joint, which will have the effect of closing the parts and keeping them closed without other appliances." It is preferred to make the joint of vulcanized india-rubber; and if the case is of hard rubber compound, "the soft or elastic rubber may be made to adhere thereto, so that the two parts with the spring joint or

"hinge will form but one piece without any fastening appliances
 "for connecting the hinge to the side pieces."

[Printed, 4d. No Drawings.]

1863.

A.D. 1863, January 1.—No 4.

BOWRA, MATTHIAS EDWARD, and FRANCIS, ARTHUR EDWARD.—"Improvements in the manufacture of elastic fabrics." Amongst the articles mentioned to which this invention applies are "tobacco pouches, bags, and the like." Two methods of manufacture are described. 1. Any suitable elastic gums are formed into sheets and distended in or upon frames or tables, whereby the sheets "are prevented from contracting crosswise, at the same time that they are distended lengthwise, and vice versa." While sheets are in this condition, any fabric of cotton, wool, silk, or other suitable material, "such fabric being also first distended lengthwise, but allowed to contract crosswise," is caused to adhere firmly thereto by means of any suitable adhesive solution, by rollers or other means such as are usually employed in india-rubber works. "The combined materials are released from their tension and allowed to contract; by this means a fabric is produced possessing elasticity in all directions."

2. Fabrics of wool, silk, cotton, alpaca, &c., are distended lengthwise and contracted crosswise, and covered with a coating of india-rubber or other elastic gums, which are caused to adhere firmly by spreading machines, rollers, or other suitable means. The gums may be applied in "solution, or in sheets, or otherwise prepared for the purpose," and "the article produced by the materials thus combined will possess elasticity in a crosswise direction."

"The said fabrics, materials, or articles being previously printed, impressed, or otherwise ornamented with coloured or other patterns," may, if required, be ventilated and vulcanized in the ordinary manner, "or as described in the Specification to the Letters Patent granted to Edward Bowra on the 5th day of November 1861, No. 2779."

[Printed, 4d. No Drawings.]

A.D. 1863, January 2.—N° 12.

DISTIN, WILLIAM ALFRED.—"Improvements in pipes for smoking tobacco or other herbaceous compounds." This invention is an improvement upon a former one for which Letters Patent were granted to Mr. Distin, dated January 3rd, 1856, No. 18. It consists "in an improved mode of connecting the tube of the pipe to the bowl." The bowl may be of any suitable substance; at the bottom is fitted a reservoir for the oil from the tobacco; at one side is a channel (cut in the substance of the bowl) for the upward passage of the smoke, and at the upper end "a shallow recess formed therein with annular grooves" that communicate with the channel. A flanged piece fixed round the lower portion of the stem fits into the recess, and "a dome-shaped piece of thin metal fits air-tight" round the stem and the upper part of the bowl. Part of the stem "extends beyond and below" the flanged piece, and "fits into the upper end of the bowl of the pipe after the smoking herb has been placed therein to a level with one or more small holes made through said bowl for lighting the contents thereof and for admitting air thereto." There must be a corresponding hole or holes in the stem, "so that, when it is required to light the pipe or put it out, the same may be done by the smoker holding the bowl of the pipe with one hand," and turning the stem partly round with the other, stop pins being fixed to both flanged piece and bowl to ensure proper opening and closing. "There is a hole formed across the tube of the pipe just above the flange piece." In the description of the drawing there is "an air hole formed in the flange piece or in the bowl as desired for allowing the air to enter the interior of the bowl;" and "this hole may be closed at will by a metal slide placed on the outside of the bowl."

[Printed, 6d. Drawing.]

A.D. 1863, January 2.—N° 15.

LYON, HENRY.—(*Provisional protection only.*)—"Improvements in the finish and mode of packing cigars, and in apparatus used for these purposes." The finish consists "in ribbing cigars lengthwise or crosswise," or in both directions "by means of a fluted or ribbed board placed at the top and bottom of every layer of cigars," while they are being pressed into shape.

The ribbed cigars are to be put up in the ordinary manner, the improved apparatus for packing being especially designed for "cigars with the common finish;" it consists of a block containing as many holes "conveniently arranged in circles" as there are to be cigars in a bundle. "After being placed in the block" a string or ribbon is carried around them for the purpose of "confining them while being laid on the wrapping paper;" they are then rolled up firmly, and the ends of the wrapper "are tightly twisted and coiled up at each end of the bundle, the ends of the twist being turned under the coil."

[Printed, 4d. No Drawings.]

A.D. 1863, January 7.—N° 56.

BRUCE, WILLIAM SQUIRE.—(*A communication from Thomas Jordery.*)—(*Provisional protection only.*)—"Improvements in "lucifer matches, fusees, and other similar lights, and in the "boxes or holders for containing the same." The match is made by immersing one half or thereabouts of the stem (which is of wood or other suitable substance) "in a solution of nitrate of potash of the ordinary kind while in a boiling state." The other portion remaining "in its natural state," the match may be used as a "common match" or as a cigar or pipe light; it may be prepared at both ends.

The boxes are made in various ways and of different materials, "chiefly however of reeds or other hollow ligneous substances, "veneer wood, natural cork," &c.; they may be ornamented or covered with colored paper, and are of sufficient strength to protect the contents from breakage or accidental ignition. To increase the facility with which a single match can be taken out, the lid is furnished with an aperture, or is "made "with a portion thereof to open" at the side or end. The general form of the box is semicylindrical; "a flat piece is used "as a lid, two pieces of cork or other suitable substance being "glued in at either end." The lid may open sideways or endways, "being glued partially along the top of the box and then "split about midway;" or the box may be formed so as to open only at the end. Sometimes the lid is made entire and to slide, and in all cases the box is rendered self-closing by aid of a strip or strips of india-rubber. Sometimes the box is made "with two "drawers inverted, the outer being half the length of the inner,

"also closed with a spring." Again it is proposed "to form a drawer box, the outer case of which is open at both ends, but the drawer moveable at one end only."

For large establishments a larger box is arranged, so that only one match at a time can be taken out:—It contains two compartments, one for matches, the other for "the delivering apparatus." The former "dips each way to the centre," and "at each end of the box at the bottom & in a line with the bottom of the channel are two apertures." In the latter is a rod held back by a spring; "this rod is placed in a line with the two apertures," and when pushed forward it enters through one aperture and thrusts out a match through the other. Or the box may contain two rollers, one at the top and the other at the bottom of a compartment containing matches. "Round these rollers a band is stretched upon which a number of small shelf-like projections are formed;" the axis of one roller "passes through the sides of the box, where it is fitted with a knob or handle;" and when the band is set in motion, each shelf carries up a match over and round the top roller, "when it falls through an aperture into a concave receptacle formed outside the box."

Upon every description of box there is a roughened surface for igniting the matches. The springs of the boxes with folding lids are so fitted that they both keep the lids closed and hold them back when open.

[Printed, 4d. No Drawings.]

A.D. 1863, January 21.—N^o 186.

CLARK, WILLIAM.—(*A communication from Jean Baptiste Pierre Camille Bergouhnious.*)—(*Provisional protection only.*)—"Improvements in desiccating and in preserving matters from decay." This invention is applicable to all substances containing moisture, and amongst them are mentioned "matches, tobacco, and other hygrometric matters liable to be injured by an excess of dampness;" it consists in desiccating them by chemical agency. The substance to be operated upon is enclosed "in a space limited and closed," and into the space is introduced "a chemical agent more hygrometric than the substance to be preserved." Caustic potash is recommended for wood, wool, linen, paper, corn, and medical plants; "a refrigerating surface colder than the glass and frame" for suppressing the moisture

"which darkens and drops from the panes" in hot houses; chloride of zinc for drying damp premises. The inventor states that he also can condense ether employed "to dissolve tannin," and can "destroy the vapor from essence of turpentine" in which caoutchouc has been dissolved.

He also claims as part of his invention a means of "revivifying" such chemical agents "and restoring to them "as economically as possible" their former properties; also "arrangements more or less ingenious," when for saving time "it should be necessary to multiply the operations more than the extent of the space will allow."

[Printed, 4d. No Drawings.]

A.D. 1863, January 23.—N^o 208.

STRANGMAN, EDWARD.—"Improvements in pipes for smoking tobacco." The pipe is constructed "so as to purify the smoke by filtration and absorption." A removable thimble (to hold the tobacco) with a flange at the top and perforations at the bottom is screwed or otherwise fitted air-tight into the bowl. In the lower portion of the bowl is placed a strainer of woven fabric "intended to be wetted with water, spirits, or other liquid," and the space between the thimble and the strainer is filled with "a suitable filtering and absorbent material," pounded or granulated and "moistened with water and spirits of various kinds, or with water or spirits in combination with alkalies or substances of various kinds." The material may be placed in the stem. A piece of sponge is placed at each end (the upper sponge being soaked in water or perfumed liquid), and the material is inserted between them. Or sponge may be placed in the bowl, and the filtering and absorbent media in the stem, or vice versa. A pipe "for smoking mild tobacco" is made by inserting the stem of an ordinary bowl into one end of a tube which contains pieces of wet sponge. The materials for filtering and absorbing are sponge or woven fabrics, "chalk, lime, peat, clay, aluminous and siliceous earths, vegetable and animal charcoal, or any of the porous or absorbent substances used for making tobacco pipes."

[Printed, 8d. Drawing.]

A.D. 1863, January 31.—N^o 290.

LYTTLE, WILLIAM ALEXANDER.—(*Provisional protection only.*)—"Improvements connected with cigars and other tobacco

"smoking appliances." The principle of this invention is "the purification of tobacco smoke by exposing it to the action of a considerable number of absorbent points or surfaces in close proximity." For cigars a conical or other shaped tube of paper, tobacco leaf, or other substance is filled with a filtering material; the butt of the cigar is inserted into one end of the tube and attached to it by gumming or binding. The prepared tube may be affixed "previously to its sale," or be sold separately, the inner surface of one end being coated with adhesive matter. The filtering material employed is "charcoal powder, cotton wool, flax, hemp, or any other suitable powdered or fibrous material, or simply a roll or strips of a suitable kind of cloth or coarse paper;" these may be used separately or combined, and may be impregnated with perfume or suitable chemicals. Such a filter may be included in the manufacture of a cigar or cigarette by rolling it up in the outer wrapper; or it may be introduced into a cigar-holder. It is applicable also to the bowl of a pipe; "a perforated metallic or other shield may, if desired, intervene between the tobacco and the filter to prevent the communication of the fire to the latter."

[Printed, 4d. No Drawings.]

A.D. 1863, March 24.—N^o 775.

COOKE, ARTHUR JOHN.—(*Provisional protection only.*)—"Improvements in portable 'Hooka' pipes," whereby they are capable of being carried in the pocket while being smoked, the tube only being visible." The upper part of a cylindrical, flat, or oval-shaped vessel of metal or glass is provided with a cap through which the stem of the pipe bowl descends into the liquid in the vessel. "The short leg of an inverted syphon is fixed in the interior of the vessel in such a position as to be above the level of the liquid; the long end protrudes through the top of the vessel, and to this end the flexible tube and mouth-piece are attached; at the end of the syphon a bulb is formed to receive the narcotic oil." The apparatus may be placed in a case of thin metal having at the top apertures for admission of air and escape of smoke, and the flexible tube is passed through one of the apertures.

[Printed, 4d. No Drawings.]

A.D. 1863, May 29.—N^o 1353.

BARKER, ROBERT.—(*Provisional protection only.*)—"Improve-
ments in the manufacture of matches usually termed Vesu-
vians." The stems of these matches are made of "pipeclay or
other argillaceous material;" they are formed in moulds "of
the proper length for two lights, that is to say, they are fur-
nished with the igniting material at each end." Or they may
be moulded "a number at a time and united end to end in
sticks, so to speak, a partial severance being made between each,
so that they may be readily broken asunder after kilning or
burning." Or they may be made "by expressing them through
holes in a box or chamber;" and instead of firing the material
it may attain sufficient strength and consistency by compression
and drying alone." Sometimes the stems are formed "with
enlarged or bulbous ends to receive the igniting material."

[Printed, 4d. No Drawings.]

A.D. 1863, June 17.—N^o 1520.

WOLF, EDWARD.—(*Provisional protection only.*)—"A new or
improved wrapper or wrapping material for use in smoking
tobacco." The object of the wrapper (within which a charge
of tobacco is placed so that the whole forms a cartridge) is to
protect the inner side of the pipe bowl from being burnt or
incrusted. The wrapper consists of thin paper saturated in
Peruvian bark, extract of vanilla, musk, lavender, or other per-
fume; it is afterwards dried and "cut into pieces of circular or
other forms suitable for wrapping in each piece a sufficient
quantity of tobacco for smoking in a pipe or tube."

[Printed, 4d. No Drawings.]

A.D. 1863, July 1.—N^o 1640.

HARVEY, JOHN, and HARVEY, JAMES SAMUEL.—"Improve-
ments in machinery for cutting tobacco into cakes suitable for
the press." A cast-iron trough or box is "divided into spaces
suitable to the size of the cakes," and at each division there are
in the sides of the trough recesses through which a knife works,
pieces of hard wood being placed at the bottom of the trough to
receive the edge of the knife. The knife is bolted to a lever and

worked by a long handle; and on a projecting ledge of the trough a dovetail or V-shaped guide is cast, running the entire length thereof; on this "the hinge-piece of the knife-lever slides from one division to another, a small catch being arranged to hold it at each position for cutting."

Modification 1. The trough is placed on wheels, on which it moves along two rails; the knife is hinged on a fixed bracket, and may be worked either by hand or by connecting it to an engine, the trough being moved along for each cut.

2. On the sides of the trough are flanges on which a frame slides, carrying a knife which is worked down through the tobacco by a screw and hand wheel. Side screws bind the tobacco while being cut, "and are screwed down upon the cake on each side of the knife, thus securing a clean cut."

The tobacco is arranged in the trough "with the stalks all lying in one direction lengthwise."

[Printed, 10*d*. Drawing.]

A.D. 1863, July 6.—N^o 1680.

COLLYER, GEORGE CLAYTON.—"Improvements in the treatment of cut tobacco for its better preservation." The cut tobacco is submitted to the action of "oxide or binoxide of nitrogen or other suitable gas" either "during the steaming process or independently of that process, submitting it to the action of the gas in the same manner as it is submitted to the steam," or in any other manner most convenient. The patentee asserts that cut tobacco thus treated "will be preserved from decomposition a much longer time," and that it is "much brighter in appearance" and "better for the purpose of smoking."

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 7.—N^o 1683.

BRUCE, WILLIAM SQUIRE.—(*A communication from Thomas Jordery.*)—"Improvements in lucifer matches, fusees, and other similar lights, and in the boxes or holders for containing the same." The match is made by immersing one half or thereabouts of the stem (of wood or other suitable substance) "in a solution of nitrate of potash while in a boiling state." The other portion may remain "in its natural state," or the stem may be dipped at both ends.

The boxes are made "in various ways and of different materials, chiefly however of reeds or other hollow ligneous substances, veneer wood, natural cork," &c.; they may be ornamented or covered with colored paper, and they are of sufficient strength to protect the contents from breaking or accidentally igniting. To increase the facility with which a single match can be taken out, the lid is provided with an aperture, or is "made with a portion thereof to open," at the side or end. The general shape of the box is semi-cylindrical; "a flat piece of wood is used as a lid, two pieces of cork or other suitable substance being glued in at each end." The lid may open sideways or endways, "being glued partially along the top of the box and then split about midway;" or it may be made to slide; or it may form one end of the box. In all cases the box is rendered self-closing by aid of a strip or strips of india-rubber so fixed that "while they operate for holding such lids in a closed position they also hold them back when open."

Some boxes are made "with a drawer to pull out from the end," the drawer being retained in a closed position by an elastic spring; these boxes are rectangular in shape. Others have "a double drawer closed at each end and partly along the top, and partially enclosed by an outer case, or with two drawers inverted, the outer being half the length of the inner, also closed with a spring." In other draw-boxes the outer case "is open at both ends, but the drawer moveable at one end only, the outer case being cut away in the shape of a lyre."

For large establishments a larger box is arranged, so that only one match at a time can be taken out:—It is divided into two compartments; one, which contains the matches, "dips each way to the centre," and "at each end of the box, at the bottom and in a line with the bottom of the channel, are two apertures." In the other is a rod held back by a spring; "this rod is placed in a line with the two apertures," and when pushed forward it enters through one aperture and thrusts out a match through the other. Or in the box there may be two rollers; round them "a band is stretched, upon which a number of small shelf-like projections are formed;" the axis of one "passes through the sides of the box, where it is fitted with a knob;" and when the band is set in motion, each shelf carries up a match round the top roller, "when it falls through an aperture into a concave receptacle" outside.

Upon every description of box there is a roughened surface for igniting the matches.

[Printed, 4d. No Drawings.]

A.D. 1863, August 1.—N° 1909.

SUTTON, EDMUND.—“Improvements in fastenings for cigar cases, portemonnaies, bags, and other like articles,” which have “a frame or other equivalent at the opening.” On the one part of the frame are fixed by preference two catch pieces or sockets, at a width apart to receive between them a sheath fixed on the other part of the frame. In the sheath are placed two bolts, which are inclined at their outer ends and recede on coming into contact with the catches, and between the bolts are one or more helical or other springs which have a constant tendency to thrust the bolts outwards. On the sheath is a cover piece, “fitting somewhat closely to the sides of the sheath, and it may be nearly of the same length in cross section; it embraces three sides of a rectangle.” In this piece are fixed two pins that pass through slots in the sheath and “angular or inclined notches” in the bolt. “The pressure of the springs on the bolts causes the cross pins and with them the cover piece to rise up at same time as the bolts are shot out to effect the catching.” To open this fastening “it is simply necessary to press on the cover piece, which takes effect on the bolts by reason of the pins pressing on the inclined surfaces, causing the bolts to be withdrawn from the catches.”

If the fastening consists of only one bolt and one socket, an abutment, “serving to impart greater solidity to the fastening,” is applied “at the end opposite to the socket.”

[Printed, 8d. Drawing.]

A.D. 1863, August 22.—N° 2089.

SIMLICK, HENRY JOSEPH.—(*Provisional protection not allowed.*) —“Improvements in the manufacture of fusees or matches employed to light cigars and pipes.” The stems are made in the following manner:—Slag or refuse from smith’s forges or smelting furnaces, or any other kind of slag or similar refuse, is reduced to powder and mixed into a paste with powdered oyster shells, “or other matters possessing similar properties thereto.” The paste

is moulded into suitable form, dried, cut into lengths, and burnt in a kiln; when cold it is fit for use.

[Printed, 4d. No Drawings.]

A.D. 1863, August 27.—N° 2119.

RICHARD, CHARLES.—“A new or improved apparatus for “lighting and cutting the ends of cigars.” This apparatus is in the form of a pistol; it may be of metal or other suitable material, and made in one piece or in two pieces united by soldering. The barrel is cut with a longitudinal slot and is formed with a collar at the mouth; inside is a slotted tube, “terminating on the side “of the butt end with a helical screw,” and on the other side with a screw ring. The tube is kept within the barrel by a rod, which by means of notches “causes it to have a circular movement.” Inside the tube is a wick-holder, provided with a knob which slides in the slots. The wick-holder has two arms forming pincers to “hold securely any substance easily lighted.” At the mouth of the barrel is a lid set on a circular spring and carrying a hook on its inner surface; this surface “is rough, having on its “centre a metal knob, cut at angles, to permit of the lighting of “matches when rubbed or pressed upon.” The lid is opened and the wick-holder is thrust forward by pushing the knob along the slots; on sliding the knob back the lid closes and the hook catches under the collar behind the ring. The butt is hollow and forms a receptacle for matches; at the inner end is a partition, and at the outer end is a lid having attached to it the cutting apparatus; this “is composed of a blade set in a frame between “two plates;” it slides up and down “when pushed by a spring “having a catch which retains it or allows it to fall.” In the lid is a hole “through which the end to be cut is introduced.”

[Printed, 8d. Drawing.]

A.D. 1863, August 29.—N° 2134.

WILLIAMS, THOMAS.—(*Provisional protection only.*)—“Improvements in machinery or apparatus for crushing and flattening the stalks of tobacco and other substances.” This invention consists “in employing two or more pairs of crushing and flattening rollers instead of one pair,” and in arranging the number of feed boxes and cutting knives according to the number of rollers. The machinery is worked either by hand or by power.

[Printed, 4d. No Drawings.]

A.D. 1863, September 15.—N° 2260. (* *)

BATTCOCK, CHARLES.—“Improvements in cigar lighters and “fusee matches, part of said improvements being applicable also “to vestas and matches, wax tapers, and candles.” These are, first, the use of stems for fusee matches of “slate or stone or “minerals of equivalent character,” splitting “the same into “small sticks or stems” of “the length and thickness required.” Instead of using stems of slate or stone, using tubes or caps of metal, or such like slow combustible or non-combustible material, filled with sawdust or wood dust moistened with a solution of gum or filled with plumbago, slate dust, &c. These stems are dipped into an igniting composition composed of glue, chlorate of potash, powdered glass, colouring matter, amorphous phosphorus in certain proportions.

Second, for perfuming candles or tapers “made of wax or “stearine or paraffin,” adding in a melted state “gum storax, or “any other perfuming substance in certain proportions,” also a perfumed tincture, such as the tincture of benzoin. The cottons are drawn “through the usual perforated plate with sufficient “tincture of benzoin for the complete immersion of the cotton” and are passed “through a second perforated plate to take off “superfluous tincture.” Boxes for holding “fusees, matches, or “candles” are lined “with a thin paper scented with otto of “roses or any suitable perfumes.”

[Printed, 4d. No Drawings.]

A.D. 1863, September 30.—N° 2396.

ATTREE, ELIZA SELENE.—(*A communication from Arthur Attree.*)—(*Provisional protection only.*)—“An improved cigar “holder.” This holder is composed of the following parts:— (1) the part which holds the cigar tip; it “is made of small “sheets of metal fitting one in the other;” (2) mechanism placed inside and communicating with a ring on the outside; the ring “is moved by means of a small spring knob, also on “the outside,” and slides upon the sheets of metal, “opening or “closing the jointed tube according to the size of the cigar;” (3) “a hollow lancet or needle pierced near the point with three “holes;” it can be pushed into the cigar “by means of a “mechanism upon the same system as that of a lead pencil “case;” (4) a metal covering, separate from or attached to the

holder, "to be used when the cigar is cracked or broken, hermetically covering the same;" and (5) a mouth-piece of any desired substance.

[Printed, 4d. No Drawings.]

A.D. 1863, October 3.—N° 2424.

TILLING, GEORGE ROBERT, and PARK, JOHN.—(*Provisional protection only.*)—"An improved mode or method of filling "tobacco pipes of an improved construction." The pipe-bowl is made with an aperture of sufficient size in either the bottom, the side, or the rear, and with a removable cover for the head. The aperture is stopped by a screwed plug, and the tobacco is put in through the aperture "in manner which will be well "understood as breech-loading." The lighting is effected in the ordinary way.

[Printed, 4d. No Drawings.]

A.D. 1863, October 23.—N° 2622.

WARDLE, ALFRED, and BRINDLEY, JOSEPH.—(*Provisional protection only.*)—"Improvements in smoking pipes." This invention "relates more particularly to pipes made of plastic "materials;" it consists in so forming the bowls that they can be readily "supported upright." At the front part of the bowl and near the bottom thereof an ornament is formed, "the outer "extremities of which serve as feet for supporting the bowl of "the pipe in a vertical position when placed on a table."

[Printed, 4d. No Drawings.]

A.D. 1863, October 28.—N° 2662.

CORONEL, ABRAHAM SENIOR.—(*Provisional protection only.*)—"An improved preparation of tobacco for fumigating purposes." This preparation "is intended principally to be used for the "purposes of fumigating plants in greenhouses and "other "places" without in any way injuring the plants and "without "leaving any nauseous or disagreeable odour;" it may also be employed for fumigating rooms. Leaf tobacco, divested of the stalks, is to be well shaken in a sieve to extract all the sand and saltpetre and other impurities. "A small quantity of pure "powdered cascarilla bark" is then to be mixed with it, and "a very small portion of the essence of valerian root" is to be

sprinkled over it. The tobacco thus prepared may then be packed up "and is ready for use either by means of the ordinary fumigating apparatus or otherwise." The valerian root "attracts all the insects and ensures their destruction."

[Printed, 4d. No Drawings.]

A.D. 1863, November 12.—N° 2811.

SIMLICK, HENRY JOSEPH.—(*Provisional protection only.*)—"Improvements in the manufacture of fuses or materials employed to light cigars and pipes." A piece of wire is surrounded with thread, cotton, or other fibrous material, and is then dipped "in colored liquid gum or clay or other substance that is a good non-conductor of heat." The wire thus prepared is dipped "in the lighting composition as usually practised," and the fusee is ready for use.

[Printed, 4d. No Drawings.]

A.D. 1863, November 13.—N° 2831.

HODSON, HARRY FARNCOMBE.—(*Provisional protection only.*)—"Improvements in cigars," calculated to preserve intact during smoking the tip of the cigar and to obtain an easier draught. One or more lateral perforations are punched, drilled, or otherwise made through the top at a suitable distance from the point, either during the manufacture or subsequently. The same effect is produced (1) "by boring or cutting out one or more lateral holes partially" through the top, and a vertical hole through the point, "and making good the said 'point' round the said hole;" (2) by leaving such a hole in the top at the time of manufacture "and finishing the 'point' round the same," and "by lining a lateral hole or holes made through the top of the cigar with a suitable tube or tubes" (split or perforated to maintain a through draught), and "returning or otherwise securing the ends or edges of the said tube or tubes to the sides of the cigar;" (3) "by inserting a plain tube of suitable material in a vertical hole or space made or left in the 'point' of the cigar, and finishing the 'point' round the outer end or edge" of the tube.

[Printed, 4d. No Drawings.]

A.D. 1863, November 20.—N° 2916. (* *)

PEZOLD, ERNST.—(*Provisional protection only.*)—"An improved pipe stick."

This implement can be smoked from either end. The pipe stick or stem consists of two parts, the actual stick, and the handle which forms the pipe bowl; and is lined with clay or meerscham. Between the bowl and mouthpiece is a piece of wood with a screw which screws into the top of the stick. The inside is "turned out sufficiently large to admit of a cylinder being inserted, round which the smoke circulates," and is cooled previous to its entering the mouth. The handle is of ivory or other material having the shape of a crutch. The stick is formed from any ordinary walking stick. The pipe may be smoked from the handle or ferrule end of the stick, a small plug being made to fill up one hole when it is smoked by the other. When the pipe is short the handle can be unscrewed and used as a pipe by itself.

[Printed, 4d. No Drawings.]

A.D. 1863, December 8.—N° 3080.

GRIMES, GEORGE CHARLES.—(*Provisional protection only.*)—

"Improvements in the manufacture of fusees, vesuvians, or other cigar or pipe lights, and in means or apparatus employed in the manufacture of cigar or pipe lights, lucifer matches, and vestas." The object of the first part of this invention is to obtain a larger surface for holding the lighting composition of such form that the amount of dipping may be greatly reduced. That portion of the stem which is to be dipped is made of metal plate "about $\frac{1}{4}$ of an inch in width;" or "a corresponding extension of the surface" may be obtained "by coiling wire."

The second part relates to making the stems of cotton. Several strands "are conducted together through any suitable composition adapted upon ignition to burn slowly," and in passing therefrom they "are drawn through surfaces adapted to remove any superfluous quantity thereof, and also to effect compression of the fibres." The prepared strands are dried, cut into lengths, and one or each end is dipped into igniting composition.

The third part refers to "clamp filling machines." The guides, between which the splints or stems "pass from the grooved plate in the bottom of the splint box to the clamping frame," are capable of yielding "and are placed sufficiently close together to clip with an elastic pressure" each of the splints passed between them. The splints "will be held correctly spaced until taken between the plates of the clamp board or

“released by a forcer of greater width than the splints,” or by other means. These elastic guides “may be combined and used “with the ordinary rigid guides.”

[Printed, 4d. No Drawings.]

A.D. 1863, December 28.—N° 3280.

CLARK, WILLIAM.—(*A communication from Ignatz Lindenthal.*)—“Improvements in the manufacture of purses, bags, and “other similar articles, and in fastenings for the same.” Pouches and cigar cases are included in this invention. The improvements relate, 1, “to the body” of the article, and, 2, to a fastening for the same.

1. The body and lining are each formed of leather or other suitable material “without seams by the application of pressure.” The principal parts of the apparatus required are (1) a block with an opening of the shape of the body to be made; (2) a pressing punch fixed to an arm of the press; (3) a hinged piece to retain the material in a stretched position on the block; (4) copper plates “applied on the under face of the elliptical “opening of the stretching part,” and also “lining the inside “of the die” (they are intended “during the shaping operation “to press out the folds of the leather formed by the gussets”); (5) horizontal guides “serving to ensure the central position “of the leather in the die;” and (6) spaces and casing for heating the apparatus. The body may however be made “partly by “stamping and partly by sewing;” the bottom part may be stamped out, and there may be lateral seams.

2. A catch or eye is mounted on each part of the frame, so that they fit beside each other when the frame is closed, and a bolt, worked from the outside by a projection, “slides backwards “and forwards so as to enter or recede from” them. Or there may be only one catch on one part of the frame, and on the other a bolt, arranged to slide by pressing a button head on the outside and “returned to its normal position by a suitable spring;” the end of the bolt next the catch is bevelled.

[Printed, 10d. Drawings.]

1864.

A.D. 1864, January 27.—N° 230.

BUTTERWORTH, THOMAS.—(*Provisional protection only.*)—
 “Improvements in machinery for cutting manufactured and leaf
 “tobaccos.” Upon the main shaft is fixed a crank to which the
 knife is attached by a connecting rod, and “on rotary motion
 “being communicated to the main shaft it gives an alternate
 “rectilinear motion to the knife.” The cutting side of the knife
 “is set at an angle to the direction of its motion, in order that the
 “whole of the cutting edge may not be in operation at once.”
 Upon the main shaft is a tappet or a cam, “which gives an inter-
 “mittent motion to a lever vibrating upon a fixed centre,” and
 at one end of this lever is a rod carrying a pawl which rests upon
 a ratchet wheel. The ratchet wheel gives motion to feed rollers
 that move the tobacco forward to the knife, and the distance
 traversed at each stroke of the knife “is regulated by means of a
 “screw” on the rod carrying the pawl. The machine may be
 worked by hand or power.

[Printed, 4d. No Drawings.]

A.D. 1864, February 8.—N° 331.

WELCH, EDWARD.—“Improvements in tobacco cutting ma-
 “chines.” The improvements relate to the action of the knife;
 “a drawing cutting motion” is imparted to it, and the edge “is
 “not subjected to contact with the surface supporting the tobacco
 “or with any substance except the material to be cut.” The
 advantages claimed are a cleaner cut, finer shreds, a better
 appearance to the tobacco, and less waste in smalls. Two methods
 of carrying out the invention are described, but “various other
 “mechanical means may be adopted,” which it will not be
 necessary to specify “as being mere mechanical equivalents for
 “the arrangements shown.”

Method 1. The knife is mounted on the upper end of a lever
 which oscillates on a fixed pin. The lower end of the lever is
 connected to an eccentric rod, which is actuated by an eccentric
 on the main shaft. The opposite end of the knife receives an
 up-and-down motion by means of a connecting rod from a crank
 pin in a plate fixed on the main shaft. “The edge of the knife

" will traverse across the tobacco " " simultaneously with and while it is performing its descending cutting motion."

Method 2. " In general appearance this machine differs much from ordinary machines, but the difference is mostly in the framework and knife carrier." The knife frame is fitted behind the front uprights of the framing " so as to slide " freely and steadily in dovetailed guides ;" it is " in the form of three sides of a parallelogram with an arched top over the middle side, from which point it is driven." The knife is fixed on the upper side on front of the frame " with its bevelled edge in front, the flat side being at the back and against the mouth," which " has a lower cutting face or bar " for the knife to cut against. The arched top has fixed in it a pin, " on which the upper end of a double connecting rod takes," and the lower part of the rod is actuated by a crank to which it is attached, the rotation of the crank " transmitting and producing the reciprocating motion " of the knife frame and knife.

[Printed, 1s. 4d. Drawings.]

A.D. 1864, April 16.—N^o 957.

PROSSER, CHARLES HOWARD.—(*Provisional protection only.*)—" An improved apparatus for cleaning tobacco pipes " by means of " the vapour of spirits of wine." The apparatus consists of a closed vessel of tin or other material supported in an open tray of similar material in such a manner that there shall be a space between the bottom of the vessel and that of the tray, " and also " a space all round the former." The vessel has at the top an opening closed with a stopper, and at the side a tube or spout, to the mouth of which the pipe to be cleansed is secured in any convenient manner, the bowl " being placed (by preference) downwards." Spirits of wine is poured into the vessel, the opening is closed, and a small portion of spirits of wine or other inflammable spirit or oil is poured into the tray and ignited ; the heat therefrom " will boil the spirit in the vessel, and the vapour " escaping through the spout will pass through the tobacco pipe " and dissolve or liquify the tobacco juice or oil therein, which " will run out at the bowl."

[Printed, 4d. No Drawings.]

A.D. 1864, April 23.—N^o 1027.

WARDLE, ALFRED.—(*Provisional protection only.*)—" Improvements in smoking pipes." This invention consists in so forming

the bowls of clay pipes "as to enable same to be easily placed "and supported upright." At the front of the bowl and near the bottom thereof an ornament is formed, "the outer extremities "of which serve as feet for supporting the bowl of the pipe in a "vertical position when placed on a table."

[Printed, 4d. No Drawings.]

A.D. 1864, April 30.—N° 1100.

NORTON, JAMES LEE, GREGORY, FRANCIS, and SALMON, JAMES.—"Improvements in presses and apparatus connected "therewith, and in pressing fats, seeds, shoddy, cotton waste, "tobacco, and paper." The frame of the press consists of a base and cross head united by standards. The machinery is set a-going by means of a wheel (with a winch handle) which communicates with a bevel pinion, both being keyed to a shaft. The pinion gives motion to a bevel wheel "which revolves loose on the boss" of a spur wheel bolted to the cross head. On the bevel wheel is cast a bracket, which carries two pinions "upon a fixed stud "passing through them, which is necked down" so as to keep the upper pinion "always fully in gear" with the spur wheel. The lower pinion "can be worked up and down the stud" by a "clutch lever," wherein is fixed a stud working in a groove in the pinion; it is cast with a clutch at the top and one at the bottom, so that when it is lifted up "it will enter a similar clutch" in the upper pinion, and when pressed down it will enter a clutch recessed in the bracket. When the lower pinion is locked in the bracket it is "half in gear" with a lower spur wheel which "has "one tooth more" than the upper spur wheel. With the lower spur wheel is cast a nut; this surrounds the screw which carries the platen.

The action of the foregoing, "giving the man at the winch the "option of using a greater or less power" is described.

The screw may be arranged "to rotate whilst the nut is kept "stationary." Two or more screws may be employed; "the "arrangement of the wheels may also be varied," still retaining the principle of "the system of gearing."

When heat is required, the material to be pressed is placed in "layers a few inches thick" between "hollow metal plates or "slabs perforated on one or both of the surfaces, and capable of "being supplied with steam by flexible or jointed pipes." The plates "are usually arranged to remain permanently in the press

"and move up and down in guides;" they may however be removable. The plates may be raised "without the aid of the press;" they have a handle at each end, and under the handles is passed a "hook-ended bar;" the bars are attached to chains, "one chain being passed over, and the other under" a pulley which is made fast to a shaft and communicates with a hand wheel. When the platen descends, the bars "fall to the bottom of their respective grooves" (which "are cast on angle plates" firmly secured to pillars), and "support the plates at their lowest positions."

Sometimes the plates are not perforated, and hot water is employed in place of steam; sometimes they are made with raised rims "to prevent the spreading of the material."

[Printed, 1s. 10d. Drawings.]

A.D. 1864, June 2.—N° 1374.

CLARK, WILLIAM.—(*A communication from Henri Adolphe Archereau.*)—"Improvements in the mode of heating animal, vegetable, and mineral matters, whereby to effect their dessication, vaporization, decomposition, reduction, fusion, or volatilization, and in apparatus for the same." The patentee mentions 53 applications of his invention; the 46th is to "drying linen and fabrics in general," and to "the desiccation of tobacco," but no particular process is described.

The invention consists "in heating in closed vessels without contact of atmospheric air the materials which are to be submitted" to the above-named operations, "by using almost exclusively as media and vehicles of the heat to be communicated or applied to them the volatile substances which evolve" from the materials themselves. A proportion of the volatile substances "is carried off either in a direct or indirect way" into closed apparatus where the substances "are superheated," and thence again into the closed vessels which are filled with the material, when the material "takes up a portion of the caloric in said aeriform substances." The arrangement of the material should be such that the products arising from or used in the process "may circulate freely through the spaces produced either by the solid and advantageous irregular form of the material itself, or by artificial arrangements suited to each substance for the purpose of leaving some void places for the passage of the

"vapours and superheating gases." The action of the heating medium on the material "causes the production of fresh aeriform matters, any excess of which latter is sometimes conveyed to superheating apparatus, but more generally to a refrigerator;" and thence to a pipe leading "into one or more refrigerators, thence to escape either into the atmosphere, into a furnace or gas holder, or into any suitable receptacle for the future use of the non-condensed portions."

There are in the drawings seven figures, each representing an apparatus provided with a superheater. The first is composed of (1) a furnace, (2) a "distillatory apparatus," and (3) pipes leading therefrom to a (4) cast iron pipe or worm, heated by the furnace "in a continuous way," and acting as the superheater, (5) a condenser, (6) a pipe "leading to other refrigerators," (7) a pipe "for the discharge of condensed products."

The second "represents the same apparatus combining the two essential elements of the system, viz., a superheater, a chamber in which the materials are distilled, and an apparatus for cooling and condensing the matters resulting from the operation."

The third "shows the invention as applied to a blast furnace;" the fourth as "applied to a small furnace;" the fifth and sixth "a separate superheating apparatus arranged according to this invention;" and the seventh "an apparatus with continuous action having a single superheater, and applied to a blast furnace."

[Printed, 2s. 2d. Drawings.]

A.D. 1864, June 23.—N^o 1574.

FRANCIS, EDWARD.—(*Provisional protection only.*)—"Improve-ments in packages or receptacles for tobacco and other articles liable to heat." This invention consists in ventilating packages, &c. by dividing them into compartments by means of open wire work or perforated plates of metal or other material, or open-ended tubes "perforated with jet openings or formed of wire gauze" or other open substance, and by placing air valves at the top and bottom or in the sides. The partitions may slide in grooves, or rest on ledges, or be held by spring catches, or their edges may be provided with studs "which take into openings formed in the inside of the outer casing," and they may be held in position by bolts or spring catches. The inventor describes

two "convenient" spring catches. A layer is placed between each partition, "taking care to introduce the last openwork frame or plate so as to prevent the contents of the package being in close contact with the cover." The tube "is formed the full length of the interior of the package," and is placed so as to pass through the middle of the contents, and the valves are arranged "to open into the interior" of the tube. In large receptacles two or any greater number of tubes may be "placed concentrically to each other," and additional air valves may be used.

[Printed, 4d. No Drawings.]

A.D. 1864, September 8.—N° 2193.

FLEMING, JAMES.—"Improvements in the treatment of tobacco leaf for the extracting of juice or liquor therefrom." The leaf having been ground or cut is put into any given number of cisterns or other suitable vessels, either open or closed, communicating by means of pipes, and placed conveniently for the transmission of the juice from one to another. The leaf is then subjected to the action of water (either cold or hot), which "passes gradually from one to another by the connecting pipes throughout the whole or some of the whole series by means of gravitation." The process may be facilitated and hastened "by pressure of air, forcing, or suction." The juice thus obtained "may be drawn off by any usual apparatus from any of the vessels, according to the strength of the solution which may be wanted." When it is wished to subject the leaf to the action of hot water, heat may be applied to any or all of the vessels or to the connecting pipes "by means of gas jets or steam or other heating appliances."

[Printed, 4d. No Drawings.]

A.D. 1864, September 17.—N° 2286.

TAMET, DOMINIQUE.—"Improvements in apparatus for obtaining light for lighting pipes and cigars." Inside a box (at the back near the hinge) is a bobbin which carries a prepared wick; the frame of the bobbin is "simply sprung in so that it can readily be removed" when the wick is exhausted. At the front of the box is a spiked wheel partially projecting through a hole in the lid; its axis is supported in holes in "division plates" within

the box. The wick passes from the bobbin beneath the wheel, and is pressed against it by a bent spring. After passing the wheel the wick "is protruded through a passage in the end of the box, and the under side of this passage is formed by a continuation of the spring, so that the wick is held sufficiently tight to prevent the fire passing back from the exterior to the interior of the box." An arm is mounted on the end of the box in front of the passage; it is roughened on the inner side and turns on an axis, round which is a spiral spring "fixed to it at one end, and at the other to a projection from the bottom of the box." The spring "tends constantly to throw the arm upwards," but a spring bolt catching into a notch in the arm "holds it down so as to make it lie along the end of the box;" the bolt is drawn back by means of a thumb piece. The wick may be of German tinder or of flat cotton braid prepared with saltpetre, "and with spots of composition upon one side of it at distances apart of about a quarter of an inch."

In using the apparatus the wick is moved forward (until one of the spots is exposed) by rotating the wheel; then the bolt is drawn back, when the roughened arm escapes, "passes sharply over the composition, and fires it." The burnt wick "is snuffed off" by replacing the arm, and the end is drawn back by turning the wheel.

[Printed, *8d.* Drawing.]

A.D. 1864, September 19.—N° 2289.

FIGGE, AUGUSTUS. — (*Provisional protection only.*)—"Improvements in the construction of safety match and fusee boxes." The improvement consists in protecting "the chemically prepared igniting surface of the box" by means of a flap (attached to or forming part of the box), "which folds over the prepared surface and fastens on the other side by means of a V-shaped tongue fitting into a narrow aperture in the box itself, or by any other means as may be found most convenient." The material used in the manufacture of the boxes may be made fireproof, and the box may have a small hole in that part "which folds over," so as to hang against a wall. The inventor does not claim "any particular kind or form of box, nor the igniting substance thereon."

[Printed, *8d.* No Drawings.]

A.D. 1864, September 21.—N° 2319.

JOHNSON, JOHN HENRY.—(*A communication from Albert Reiniger.*)—"Improvements in machinery or apparatus for the "manufacture of cigars." This invention relates, first, to machinery "for cutting tobacco intended to be made into cigars, "and depositing the same when cut into separate receptacles in "the proper quantities required for each cigar." The tobacco is introduced into the machine "parallel to the knife upon a belt of "caoutchouc (which may be adjusted at will) and between metal "bands." On the main shaft are keyed four eccentrics and two pulleys; two of the former "serve only to cause the knife to rise "and fall by the aid of a lever arm or beam;" the third gives motion to the receptacles whilst the apparatus which removes the cut portions is performing its revolution, and the fourth gives motion to rollers, "over which are stretched endless belts of "india-rubber, which cause the tobacco to advance" whilst it is "compressed by a shorter belt." When the shaft begins to rotate, a journal "capable of being adjusted along a slotted arm "or crank" gives a rotary motion through a rod and pawl to a wheel which acts upon the rollers; "these latter cause the tobacco "to fall into the boxes provided for that purpose." When the fourth eccentric has moved so as to bring the journal to a particular position, the required quantity of tobacco will have advanced, and the pawl will move back. At this moment the first two eccentrics will move, and the knife, attached to a slide which works in vertical guides, will descend and cut the tobacco. The fourth eccentric "withdraws and no longer acts upon the "endless bands or belts when passing its dead centre," whilst the third by the intervention of a hook (which slides in a guide) and of a disc causes the apparatus to make a quarter of a revolution. When the shaft which turns the apparatus is thus moved, a pinion "of 24 teeth" fixed on this shaft drives a wheel "of "96 teeth," whose shaft carries a chain wheel, and this causes frames to advance, "each carrying 28 compartments," into which the tobacco falls. During the time that the frames remain stationary, the machine causes the tobacco to advance, and closes by means of a rod and an antifriction roller (mounted on one of the first two eccentrics) "the lid of the box which is just in front of "the knife, whilst the box which is below is opened and allows "the tobacco contained therein to fall into one of the receptacles

" of the frame." Each frame when filled is removed from the machine and taken to one " which effects the rolling of the tobacco " in the leaf or outer covering," and which forms the second part of the invention.

This machine is worked by a treadle; it consists of " a convex " curved table or fixed sector combined with a vibrating forked " lever carrying a roller, and with a non-elastic strap." The filled frame is placed on a " small table or shelf;" the contents of a compartment are deposited " in a species of pocket " formed in the strap (the tension of which is regulated by a tension roller); an outer leaf and a piece of paper are placed upon the strap; " the lever with its roller is caused to travel from one end of the " table to the other," such motion " causing the tobacco to be " rolled inside the leaf by the action of the strap;" and the rolled cigar " is held between two moveable jaws by the aid of a spring " or weight."

[Printed, 10*d*. Drawing.]

A.D. 1864, October 8.—N^o 2479. (* *)

DONOVAN, RICHARD EDWARD, O'FARRELL, MATTHEW, and O'FARRELL, FRANCIS.—(*Provisional protection only*).—" Im-
" provements in machinery or apparatus for rolling and twisting
" tobacco, also applicable to the rolling and twisting of hemp,
" flax, wool, cotton, and other fibrous substances."

According to this invention the tobacco is laid upon an endless travelling belt, above which a second endless belt works, the two belts being placed " at an angle to each other and moving in oppo-
" site directions," and the effect of the arrangement being that the tobacco is rolled and twisted into the form of a sliver, which may contain a core of tobacco if desired. Plates of wood or other material are made to press the belts together " at the point where
" they cross each other," these plates either forming a separate endless chain or being connected to the belts. The twisted tobacco passes from the belts to a reel, which, if desirable, may rotate " at
" right angles to its axis," so as to further twist it before it is wound upon the reel.

[Printed, 4*d*. No Drawings.]

A.D. 1864, October 11.—N 2507.

COLES, GEORGE, JAQUES, JAMES ARCHIBALD, and FAN-
SHAWE, JOHN AMERICUS.—" Improvements in the manufacture

" of bags, sacks, pouches, and other flexible articles of capacity." This invention "relates principally to a means of closing the " neck, mouth, or entrance of such articles automatically," and it is described in the manufacture of, first, tobacco pouches, secondly, cigar cases, and thirdly, portmanteaus.

First, the whole article may be formed of one piece of rubber, or the mouth only may be of the elastic material and attached in any convenient manner. The article is moulded of the required form; a moulding block of metal or hard rubber is placed inside; another block "is then placed in the mouth while the rubber is in " the crude or raw state, and a wire or string is passed round the " neck of the bag to secure it" to the mouth-block. The mouth part with the block therein "is then twisted forcibly round about " one-third of a circle," and is held in this position between the blocks by means of bandages "while being cured or vulcanized." The creases "will remain permanent," and form a self-closing mouth. This collapsible mouth admits of several varieties; it may be made "by folding down the sides one after the other," thus "producing a diagonal crease;" or "by rolling up the edges " of the mouth instead of twisting them round; or by cutting it " in vandykes," which are to be folded down while the rubber is in an uncured state; or "by folding over the ends and sides." The bag or pouch may be "something like a lady's reticule, which " is closed by folding over the vandyke pieces" on opposite sides.

Secondly, one article described will serve as either a tobacco pouch or a cigar case. The mouth is made with an elastic flap with flexible sides, and to keep the article in shape, a strip of metal, hard rubber, or cane is inserted in the edge of the mouth, and also in the edge of the flap. The cigar case described " consists of seven vertical compartments," but any other number may be substituted; "these are formed of sheet rubber protected or stiffened by curved pieces of perforated sheet metal," that are "covered inside and out with thin sheet rubber." While the rubber is in the uncured state, the sides of the compartments "are made adhesive," so as to adhere "and form the combined " case." A bottom of rubber closes the lower end, "and the " collapsible mouth is adapted to the upper end, and is formed in " the manner already explained."

[Printed, 1s. 4d. Drawings.]

A.D. 1864, October 26.—N° 2651. (* *)

JENNER, FREDERIC.—“Improvement in purses, cigar cases, “bags, and other similar receptacles.” This invention refers chiefly to such of the above articles as “are formed of two similar “parts or halves united by a hinge.” The edges of the leather or other material of which the body of each half is made are turned over and round a metal rim or plate. The frame “which “carries the hinge and constitutes the finished edge or frame of “the receptacle” is secured to the turned-over portion of the leather and to the metal rim by screws or rivets which are passed through the frame and leather into the rim.

[Printed, 6d. Drawing.]

A.D. 1864, November 4.—N° 2730.

HARRIS, HENRY BINNELL, and THOMSON, JOHN PHILIP.—“Improvements in cigars,” whereby “the hitherto necessary “slitting, biting, or cutting the end” is dispensed with. The improvement consists in cutting, drilling, or otherwise forming a clear hole or holes transversely through the pointed end of the cigar with a punch or other instrument during the manufacture, thereby “forming a vent to make the air draw freely through the “cigar, and also to form a cavity internally to receive the oil or “other fluid.”

[Printed, 4d. No Drawings.]

A.D. 1864, November 5.—N° 2742.

CROMPTON, JAMES ROGER.—“Improvements in embossing “or indenting tissue or other paper with a pattern in imitation “of laid water marks or other designs.” The principal object of this invention is “to imitate, or nearly so, the laid water marks “of cigaret paper, or other paper of a similar appearance.” The object is accomplished by the aid of four systems of rollers and two drying cylinders; each system consists of a pair of pressure rollers and other rollers for stretching and guiding. A wire cloth is stretched round the first system, and carries “the paper in a “state of pulp” through the first pair of pressure rollers. “The “paper in a moist state is delivered from the wire cloth,” and is received on a felt which is stretched round the second system; *the felt* conducts it through the second pair, and delivers it to

another felt. This felt, which is stretched round the third system, conveys the paper between the third pair, whence it passes by means of other rollers on to and round the first drying cylinder. The paper next passes between the fourth pair of rollers; the lower of these "is encased with paper or other elastic material," the upper "is engraved or otherwise prepared" with the proposed design; from this pair it is passed over the other cylinder, and is then "wound on rollers ready for passing to the cutting machine." If the design "be of such a nature as to require more rollers to form it," they are all "made to act on the paper as it passes over" the lower roller. The last-mentioned rollers may be so placed that they may act on the paper "either before or after" it has passed over "a drying cylinder or drying cylinders, as may be found to give the best results."

[Printed, 8d. Drawing.]

A.D. 1864, November 19.—N° 2898.

PALMER, WILLIAM, junior.—(*Provisional protection only*).—"Improvements in cases for carrying pipes and tobacco." The case is made by preference of sheet tin or other metal, in shape oval or oblong, with the corners rounded, and the top and bottom similar to each other, "each being dished or concave, so as to present no sharp edge or corner." All round the bottom there is a raised edge, and inside are three compartments, the middle for the pipe, one for tobacco, and one for matches and rubber. The upper part is hinged to the lower and closed by a spring or other catch; it is lined with vulcanized india-rubber or "other elastic and impermeable material," so that, when the case is shut, the lining presses on the raised edge and on the upper edge of each compartment, thereby hermetically closing each and shutting off "the objectionable smell of the matches" from the tobacco, and keeping the latter moist. The case may be covered with leather or other ornamental material.

A similar case may be made to hold cigars and matches. The compartments must be arranged accordingly, and as before, "the elastic lining of the lid pressing on the upper edges of the partitions closes each compartment hermetically."

[Printed, 4d. No Drawings.]

A.D. 1864, November 23.—N° 2928.

OBERDOERFFER, ADOLPH.—(*Provisional protection only*).—"An improvement in butt-pieces for segar holders." The butt-

pieces are made of india-rubber or any other elastic substance "in the same shapes and forms as those used hitherto, but which "have been made of non-elastics." The advantage claimed is that such a butt-piece fits "hermetically tight" on to cigars which are not "of a perfect cylindrical form."

[Printed, 4d. No Drawings.]

A.D. 1864, November 24.—N^o 2943.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Charles De Changy.*)—(*Provisional protection only.*)—"An improved lighting composition, and an improved apparatus for "lighting, together with the employment of pyrophorous materials "for the lighting of cigars, pipes, and other articles." The composition "is formed of a mixture of about five per cent. of oxide "of calcium, or of about fifteen per cent. of sulphate of calcium, "or of carbonate of lime with coal finely divided and calcined "at a dull red."

The apparatus consists of a case (which may be varied in shape) formed with (1) "a reservoir for holding the before-mentioned "material," (2) an opening at the lower end "by which the "material is introduced into the reservoir," (3) a compartment "where the material is burnt," and (4) "a distributor for placing "so much of the pyrophorous material as is to be burnt in contact "with the air."

[Printed, 6d. Drawing.]

A.D. 1864, November 25.—N^o 2952.

LAWS, TIMOTHY BUSH.—(*Provisional protection only.*)—"Improvements in pipes for smoking," whereby the oil is prevented from passing into the mouth of the smoker. A disc, having in it holes "formed around its edge," rests on a ledge inside the pipe-bowl. "A small pipe which forms a continuation of the passage "through the stem" rises up inside the bowl to "within a short "distance of the centre of the bottom of the disc;" consequently the oil which may pass through the holes "will fall to the bottom "of the bowl, and will not be able to enter the passage through "the stem."

[Printed, 4d. No Drawings.]

A.D. 1864, November 29.—N^o 2977.

DE BOULIMBERT, JOSEPH DURIS.—"A new kind of cigar "made of other materials than tobacco." This cigar is made

from "the best leaves of Indian corn;" after removing the parts which are hard and not easily folded, they are placed in a vessel "half full of a solution composed of one part of molasses and three parts of sage, to which has been added a certain quantity of roasted barley reduced to a very fine powder, the whole being well mixed and producing a nearly black liquid." The vessel is closed hermetically, and, when about fifteen days have elapsed, the leaves are taken out, well drained, and put into another vessel "containing a very strong infusion of the best coffee." This vessel also is closed perfectly air-tight, and after six days the leaves are taken out, well drained, and dried in summer by the heat of the sun, in winter in a stove heated to about 20° centigrade, when they are fit for manufacturing. Two or three leaves are laid one on the other, and in the middle is placed a piece of German tinder about 2½ inches long; they are rolled round, surrounded with a long leaf, and covered "with a band of very thin paper, having the colour of tobacco" and "a thin coating of gum, dissolved in an infusion of very strong coffee, on the part which is to surround the cigar." The cigar is then "pierced all through by means of a pin." These cigars must be stored in closed vessels "containing very strong roasted coffee reduced to powder."

[Printed, 4d. No Drawings.]

A.D. 1864, December 10.—N° 3070.

MORGENTHAU, LAZARUS. — "Improvements in preparing tobacco for the manufacture of cigars, snuff, and other purposes." The object of this invention is "to remove nicotine and other injurious elements from tobacco." First, the tobacco is steamed "with spirit or alcohol" (about 5 gallons to 1 cwt. of tobacco) in a hermetically sealed vessel for "from half an hour to three hours according to the quality."

Secondly, the tobacco is placed when dry in a hermetically closed vessel "containing extract, essence, and oil obtained from the pins or leaves, branches, or other parts of trees of the pine genus;" after steeping for from two to five hours, it is dried in a hermetically closed chamber, and "may then be worked up in the ordinary manner."

The following proportions are given "as answering well:"—tobacco, 1 cwt.; extract, 30 lbs.; essence, 6 gallons; oil, 1 lb.

[Printed, 4d. No Drawings.]

1865

A.D. 1865, January 9.—N° 68.

DAVIES, WILLIAM.—“Improvements in machinery for the manufacture of cavendish, negrohead, and other tobacco.” The machinery is of the following construction:—“One, two, or more horizontal rollers” are mounted parallel to each other (when more than one is used) in a stationary frame. Immediately above each is mounted a roller working “in vertical sliding bearings within the stationary frame,” and each bearing has connected to it “a vertical link rod,” whose lower end is jointed to a horizontal arm, carrying sliding weights at its outer end. The rollers are all driven “by tooth, friction, or other suitable gear,” but the upper in the opposite direction to the lower. The trays whereon the tobacco is evenly spread are formed with stout edges (by preference of angle iron) on the longitudinal sides, “the ends of the bottoms being so tapered as to enable them to readily enter between the pressing rollers.” A reciprocating motion may be given to the rollers, so that the tobacco may be acted on several times, and at the same time the pressure may be increased or diminished. To convert the tobacco into a cake, the upper roller is made “of such width as to cover the space between the two vertical edges of the trays.” When two or more sets of rollers are used, the trays should be long enough to extend from one to the other. In lieu of a tray “a simple flat plate” may be employed, and one set of rollers may be grooved to receive the plate, the other set being “turned up with projections or collars to coincide.”

The pressed cakes are removed to a table, over which is fitted a platen “having a vertical reciprocating motion applied thereto by means of screw, cam, knuckle-joint, lever, or their mechanical equivalents.” The face of the platen is furnished “with a number of knives placed parallel to each other at the required distance apart;” and the strips of tobacco formed by the action of these knives are moved forward and cut to the desired size under a second platen “fitted on its under side with knives placed at a right angle” with those on the other. Or one platen may be constructed “with a series of cutting dies of the required form.” Both knives and dies have fitted between them “spring buffer plates for the purpose of forcing out the tobacco” as the platen ascends. Sometimes the upper surface of the tray or table is formed “with a series of inclined planes corresponding to the

" size of the plugs of tobacco required, and so arranged as to allow the edges of the knives to pass down the vertical sides of the inclined planes to insure a clean cut." The machinery may be worked by hand or power.

[Printed, 8d. Drawing.]

A.D. 1865, January 14.—No 123.

NEWTON, ALFRED VINCENT.—(*A communication from William Woodman Huse.*)—"Improvements in machinery for pressing and cutting tobacco." By means of this invention the operations of pressing and cutting "can be efficiently performed by one machine." The construction is as follows:—In the upper part of a frame is fitted a moveable horizontal bed with parallel vertical sides, and a front edge of steel, "with a sharp square edge to facilitate the cutting operation," and provided with a cap plate, which when in use "is held down by a wedge key." At one side of the bed is mounted a horizontal shaft, to the front end of which is fastened a fly wheel "with arms and a crank-handle," and "to the inner face of the hub and rim of this wheel are secured cutters." The tobacco is fed forward by a follower on the end of a screw which passes through a rotating nut, and the nut is mounted in the rear end of a saddle piece," which swings on trunnions.

When the machine is used for cutting, the saddle piece is held in a horizontal position "by a securing pin" or other equivalent means; the nut carries a ratchet wheel actuated by a pawl on an arm, "which turns on the rear part of the nut," and the arm receives a vibratory motion through a connecting rod from a crank on the rear end of the fly wheel shaft. To regulate the extent of feed there is a cam plate "against the outer face of the ratchet wheel and mounted so that it can turn on the nut;" the cam plate is held by a screw which passes "through a segment slot" to admit of setting it.

To prepare the machine for pressing the rod is disconnected from the ratchet arm, the securing pin is taken out, and the saddle piece is "turned up in a vertical position; the nut also is secured in the saddle piece by means of a set screw. The bed is removed, and a trough is placed on the base plate of the frame; tobacco is put into the trough, a top is placed on, and the screw is turned by a hand-wheel on its outer end.

This invention includes an improvement in the cutters, whereby they are prevented "from being gummed by the juice which is forced out from the tobacco":—The cutting edge "is made convex in the form of a segment of a circle to obtain a gradual draw cut, and either smooth or serrated;" and the inner face is "bevilled outward from the cutting edge to the back, so that this entire face from the cutting edge is inclined outward from the plane of motion of the cutting edge."

[Printed, &c. Drawing.]

A.D. 1865, February 20.—N° 477. (* *)

GEDGE, WILLIAM EDWARD.—(*A communication from François Stoker.*)—"A chemical combustible substance, and apparatus to which it is applicable," namely, to foot warmers, chafing dishes, stirrups, portable kitchens, smoothing and soldering irons, tea-urns, and coffee-pots, "finally, to every apparatus where heat or fire is required." The substance or fuel is composed "principally of carbon obtained from the distillation of light woods in a close receptacle, say, two-thirds 'fusain' (the charcoal used by artists) reduced to powder, and one-third vinegar charcoal." To this mixture, which serves for basis, various metallic salts are added, "such as nitrates of soda, of potash, or of baryta, which play the part of combustible and oxygenating bodies, their proportions varying with the amount of caloric required from the fuel. Lastly, agglomerating bodies, such as gum adraganth, fecula, starch or dextrine, are added in proportions varying from two to five per cent. The whole having been well triturated can be pressed and moulded into very compact cakes." This fuel "may be lit by an ordinary lucifer match, and give out a heat of from 77 degrees Fahrenheit (25 degrees Centigrade) up to 848 degrees Fahrenheit (400 degrees Centigrade), accordingly as its combustion is quickened or slackened." The box, inside of which it is placed, is of wire gauze or perforated metal, and provided with regulators for increasing or decreasing the draught. The fuel may be "used as a cigar light in shops & public establishments."

[Printed, &c. Drawing.]

A.D. 1865, March 2.—N° 595.

ROBERTS, CHARLES LEWIS.—(*Provisional protection only.*)—"An improvement in cigars." The tops are formed "into smooth

"agreeable mouth-pieces impervious to damp or moisture" by coating them "with meerschaum, enamel, or composition reduced to the consistence necessary for enabling the same to be readily applied thereto by dipping or otherwise, whilst in like manner the drilled holes or cavities formed in the said ends for the passage of the smoke are also provided with a coating of the same communicating with the external film."

[Printed, 4d. No Drawings.]

A.D. 1865, March 4.—N° 615.

NEWTON, WILLIAM EDWARD.—(*A communication from Luther Holman Hale.*)—"An improvement in putting up tobacco for smoking, and in the implements or pipes for smoking the same, and in making tobacco paper." Four inventions are claimed:—1, making "what may be termed tobacco cartridges;" 2, "constructing a tobacco cartridge" such that "it shall be sustained in or upon the tube or pipe with which it is smoked by means of its bottom;" 3, a tube or pipe "adapted to be used in connection with tobacco cartridges;" 4, coating sheets of fibrous material on one or both surfaces with fine particles of tobacco, so that they can be used in smoking "after the manner of leaf tobacco."

1. The cartridge is in the form of "an inverted truncated cone" or a cylinder, according to the shape of the pipe bowl. For its manufacture there are required, (1) "a sharp-pointed taper pin" secured to a base and having at its bottom and concentric with it a cylindrical boss; (2) a cup (in the shape preferably "of an inverted frustum of a cone"), convex at bottom and perforated to fit the pin; below the bottom is a socket which fits the exterior of the boss; (3) a plunger, whose lower end fits the sides and bottom of the cup and "is bored centrally" to receive the pin, while the upper end (which "is slightly countersunk"), fits the mouth of the cup and has a central hole to receive the pin when the plunger is inverted; (4) paper or other suitable substance so cut that when the edges are pasted or gummed it forms "a conical tube or bottomless bag;" (5) a blunt pin (mounted on the base) "which enters the hole in the bottom of the cup and pushes out the cartridge" when made and when the cup is taken off the boss. The process of manufacture is explained. The shape of the pin makes a cavity in the cartridge for the reception of a "wad of loose raw cotton which is to absorb the essential oil."

2. The envelope of the tobacco is provided with a stiff bottom of paper, pasteboard, or other substance. The tobacco is supported upon a perforated metal plate placed above the bottom, but the plate may be dispensed with. The bottom or disc is perforated and must be of sufficient strength to support the cartridge on a tube thrust through the perforation.

3. The pipe has a stem with a screw thread at one end which screws into a cylinder; the mouth-piece has an elastic ring slipped over it. The opposite end of the cylinder is closed by a cap piece, and the upper and lower sides are tapped, the latter for a screw which connects it to a reservoir, the former for a screwed tube which passes upwards into the bottom of the cartridge. The upper end of the tube "may be barbed or corrugated, or be divided longitudinally, and made so that its sides shall have a tendency to spring apart." Between the bottom of the cartridge and the cylinder is a removable heat-radiator, "whose office is to intercept and disperse the heat arising from the combustion of the cartridge and thereby protect the cylinder;" it may be of any material, a good conductor of heat being preferred.

4. A sheet of thin paper, tobacco leaf, or other suitable fibrous material is coated with a solution of gum arabic or other adhesive substance, and is besprinkled with fine or pulverised tobacco on one or both sides; pressure is then applied "to make the particles lie as compact and smooth as possible." The material thus prepared may be used as a cover for the before-mentioned cartridges, or as a cover for cigarettes, or it may be rolled up and shaped into a cigar. The tip end of the cigar may be coated by dipping it in dissolved gutta percha, and the cigarette (named by the patentee tobacorette) may be fitted with a mouth-piece "of coiled paper, of porous wood, or of a perforated plug of wood or other material."

[Printed, 1s. Drawing.]

A.D. 1865, March 20.—N^o 770.

OLIVER, THOMAS, and MUSTO, JOSEPH WILLIAM.—(*Provisional protection only.*)—"An improved top or mouth-piece for cigars or cheroots." The mouth-piece, which may be of wood, bone, ivory, amber, metal, or other material, is to be made in any ornamental shape, and "to be made with and form part of the cigar or cheroot, being attached thereto by gum or cement." To fit the mouth-piece, the top end of the cigar "is formed blunt."

[Printed, 4d. No Drawings.]

A.D. 1865, March 25.—N° 852.

JOHNSON, JOHN HENRY.—(*A communication from Emile Gabriel Aubry and Claude Joseph Barral.*)—(*Provisional protection only.*)—"Improvements in spittoons." The spittoon is fitted with castors; the body may be of metal or other material more or less ornamented, and the lid, which by preference is of metal and of an ornamental character, has a toothed segment fitted on to the middle of the hinge pin. "This segment gears into a vertical "straight rack sliding in a guide and capable of being fixed at "at any height therein by a pinching screw." On the bottom of the rack is a projecting piece or foot lever, which on being depressed brings down the rack and causes the lid to fly open and remain so whilst the rack is held down, "or so long as the pinching screw remains tightened up." The amount of opening is controlled by a stop piece against which the rack is brought when depressed, and the closing of the lid is rendered self-acting by the "action of a spring which tends to raise the rack again immediately it has been released." The projection may be replaced by a knob or handle to be worked by hand.

[Printed, 4d. No Drawings.]

A.D. 1865, April 8.—N° 1003.

SIMLICK, HENRY JOSEPH.—(*Provisional protection only.*)—"Improvements in mechanism applicable to frame filling machines for wooden matches, vestas, and vesuvians." The invention consists of self-acting machinery "to produce the various "motions of the ordinary frame filling machine," and to attain "greater economy, rapidity, and accuracy." On the main shaft is a cam wheel "so keyed and of such a throw as to push forward "the splints the required distance into the frame at the proper "moment," and on the end of the shaft is a mitre wheel "giving "motion to another shaft at right angles thereto, on which is "either an eccentric or a crank, whereby the proper motion is "given to the box containing the splints; these two movements "are so regulated as to take place alternately." Each frame board when filled is lowered by means of a rack and pinion at each end of the frame, "the same being worked by a pull put in "action by an eccentric or cam on the transverse shaft." By the same or a separate motion, if required, "a frame board is allowed

" to drop on to the one previously filled ; the frame is thus filled
 " and gradually lowered about one tooth in the rack each time
 " till the whole frame is complete."

[Printed, 4d. No Drawings.]

A.D. 1865, April 24.—N^o 1139.

BUTCHER, HENRY CHARLES.—(*Provisional protection only.*)
 —"An improved cigar cutter." A piece of steel plate or other
 metal, "about three inches long by about three-eighths of an inch
 " wide" and as thick as "a fourpenny piece or thereabouts," is
 hollowed out at each end to a semicircle, "leaving points on each
 " side of the semicircle," and the edges of the semicircles are
 ground sharp "in opposite direction and both in bevil." To prevent
 the ends when placed in proper position from swerving, either four
 slots are cut in the steel behind the semicircles, or two loops are
 formed "inside and behind the semicircle which is the under-
 " most," or a lug is made "on each side of the semicircle which
 " is to be uppermost," or the plate is bent "into form (which is
 " that of an ordinary key-hole) so that one end overlaps the
 " other," a sharp edge bevelling downward and another bevelling
 upward. The tip of a cigar is introduced into the circle, on pres-
 sure the edges will meet and pass each other, and the cigar tip
 will drop.

[Printed, 4d. No Drawings.]

A.D. 1865, June 23.—N^o 1683.

WHITE, LESLEY.—(*Provisional protection only.*)—"Improve-
 " ments in clay tobacco pipes." The first improvement consists
 in making a portion of the stem near the bowl "of a larger bore
 " than the terminal part thereof which is put into the mouth."
 This is done "by placing an enlarged core within the pipe when
 " it is moulded, such core being made of any light combustible
 " substance" which becomes burnt to ashes when the pipe is fired
 and can afterwards be easily blown out. The small bore in the
 terminal part is by preference made to enter the upper portion of
 the enlarged bore, so that the oil, &c. may be retained in the lower
 portion.

The second consists in moulding the bowl with a diaphragm
 therein, which is perforated with a number of small holes, "by
 " preference in a circle and leading to the enlarged tubular part."

[Printed, 4d. No Drawings.]

A.D. 1865, July 13.—N° 1844.

COLLYER, GEORGE CLAYTON and ROBERTS, CHARLES LEWIS.—“Utilizing the stalks, smalls, and waste of tobacco for “ certain purposes.” These portions are submitted within suitable closed vessels “to the action and heat of water and steam either “ surcharged or otherwise,” using such a quantity of water “ as “ will be taken up and absorbed ” by them, and causing the action of the steam to be continued “until the absorption is “ rendered complete” and “the materials under treatment “ formed into a semi-plastic or coherent substance.” The mass is then taken out, allowed to cool, and passed through or between rollers or other machinery proper for reducing it to pulp, “pre-“ ferring to employ for the said purpose rollers of uniform diameter “varying in number and speed.” After being allowed to dry it is formed into sheets or tissues by again passing it between rollers of equal diameters and “revolving uniformly;” these “when dried in any ordinary manner are then ready for use.” The sheets or tissues may be made into cigars or cut into shreds or used for fumigating greenhouses; in short they may be employed “for the various purposes to which tobacco is or may be “ applicable.”

[Printed, 4d. No Drawings.]

A.D. 1865, July 18.—N° 1871.

RICHARDS, WILLIAM ANTIL. — “An improved pouch or “ receptacle for holding tobacco and other similar purposes.” The bag of the pouch is of caoutchouc or other elastic or flexible material; it is made in two parts, each “of a tray shape but “ bulging or bellying at the edges ” and connected by two frames. Each frame is composed of two plates between which the edges of the caoutchouc are pinned or riveted and the under plate of the upper frame and the upper plate of the under frame are angle shaped. The upper frame is divided into two parts, the hinder part being rigidly fastened to the under frame, and the front part hinged to it “so as to open like a mouth or jaw.” Any convenient fastening may be employed, but the one preferred is “a “ staple or catch sliding in guides and controlled by two springs, “ one on each side.”

[Printed, 8d. Drawing.]

A.D. 1865, August 4.—Nº 2032.

NEWTON, ALFRED VINCENT.—(*A communication from John Prentice.*)—(*Provisional protection only.*)—"Improvements in "machinery for manufacturing cigars." This invention relates to improvements "on any existing cigar-making machine" in which four rollers are employed for rolling up the filling and lapping the wrapper round it. In this machine an endless apron "passing around a tension roller and extending over a bed to "one of the operating rollers is used to carry in the wrapper." The shaft "is stopped at an arm that hangs from a sleeve and "stud secured to the main frame," and at the end of the sleeve is the arm which "forms the bent lever for drawing back the "shaft and roller for introducing the filling." A mould of the tapering shape intended to be given to the tip of the cigar "is "located between the rollers and is open on the top, being formed "in a plate of metal, from the surface of which a small volute "rises to finish the end," and contiguous to the end of the mould is a cutter for removing the surplus portions of the wrapper. The cutter may be a revolving shear, but "a reciprocating die" is preferred, which by vibrating rapidly cuts off the surplus "and "allows the mould to finish the head perfectly;" the die is acted upon by a lever and cam "revolved by the gears from the shaft." The mould is "on an arm;" it is kept up by a spring, and "a "loose link to the cross bar" pulls it down slightly as the lower rollers are opened to drop the cigar. To prevent the mould "from holding the cigar between itself and the upper rollers" the cigar "should be pressed endwise into the mould;" this is done "by imparting to the roller an endwise movement" obtained by means of "a worm on the roller shaft taking into a pinion keyed "to a shaft, on the upper end of which is a hand wheel with a "friction spring to its side." The roller is slid endwise back to its place "by turning the hand wheel and pinion."

[Printed, 4d. No Drawings.]

A.D. 1865, August 22.—Nº 2160.

LOPEZ Y MÚÑOZ, MANUEL JOSÉ.—(*Provisional protection only.*)—"Improvements in machinery for making cigarettes. The machine comprises (1) a hopper containing an agitator "to which a "rocking motion is given by a connecting rod and a crank on the "main axis;" (2) a roller which closes the bottom of the hopper

and in which "is a cavity of a size to hold the quantity of tobacco required to make a cigarette;" it is turned at suitable intervals "by means of a star wheel on its axis resting in contact with a wheel on the main axis," and at each revolution it drops its contents; (3) feed rollers (for the paper) "actuated by a train of wheels connecting them with a star wheel, which in turn is moved at intervals by a wheel on the main axis;" (4) four small rollers rotating in the same direction and "all geared by pinions with a star wheel revolving in contact with a wheel on the main axis;" (5) a plunger which performs various offices and is acted upon at one time "by a crank on the axis of which is another star wheel;" at another "by a bent lever rocking on a centre intermediate of its length;" against one end of this lever a cam on the main axis acts at intervals, and its other end then comes against the end of the plunger;" and at another by "pins on the wheel on the main axis coming against an arm on the axis of the crank" by which the plunger is worked; each pin produces in passing the descent of this instrument, and a spring afterwards causes it to rise;" (6) shears to cut off the length of paper used in making the cigarette; one blade is stationary, the other is connected by a link with a crank on whose axis is a pinion rotated by "a toothed segment fixed to a wheel on the main axis" and giving a forward and backward motion to the blade; (7) instruments for turning up the ends of the paper; "these are mounted on axes to which a semi-rotation is given at the time required; each axis is in gearing with a rack "moved by a lever, which in turn is actuated by a pin on one of the wheels on the main axis;" (8) other instruments "employed in folding over of the paper;" they are mounted on centres beyond the ends of the cigarette, and "their ends descend on to the paper and crease it down." The progress of the tobacco and paper through the machine is described; and when the cigarette is rolled up, "the two forming rollers on one side of it recede from the other two," being mounted on a swing frame to enable them to do so. "The two frames holding the forming rollers are locked together during the making of the cigarette by a lever catching on to the swinging frame;" this lever is caused by a cam on the main axis to free the frame, and a pin on one of the wheels then strikes a projection on the frame and gives the movement required, when a descent of the plunger pushes out the finished cigarette.

[Printed, 4d. No Drawings.]

A.D. 1865, September 11.—N° 2325.

MCEVOY, CHARLES AMBROSE.—(*Provisional protection only.*)—"Improvements in pipes used for smoking." The bowl is a cylinder "at the front end of which" is a grating capable of being opened when about to charge. "At the back end of the cylinder is a passage into it smaller than the interior diameter of the cylinder, and in the cylinder there is a perforated piston on a hollow stem, the stem being of like diameter to the passage into the back end," whilst the piston "is of the same diameter as the interior of the cylinder." The stem is by preference of metal, and its back end is formed with a collar, "which, when the piston and stem are pushed as far as they can go into the cylinder, comes against the back end" of it. The end of the mouth-piece "is received into the back end" of the stem and slides into it. By this arrangement the parts "slide one within the other, so that when out of use the pipe occupies but little greater space than the cylinder." Nebs passing through grooves are formed on the sliding parts, so that, when these are drawn out and turned partly round, thereby removing the nebs from their grooves, they "become locked and held from sliding back."

[Printed, 4d. No Drawings.]

A.D. 1865, September 15.—N° 2359.

READ, EDWARD THORNTON.—"Improvements in apparatus for cutting tobacco." This machine is ordinarily worked by hand, but by the addition of a revolving crank power or a treadle may be employed. Near one corner of a sole (provided with a drawer) a metal standard is fixed, in the upper forked end of which a handled lever is centred, and to a short arm or projection formed on the under side of the lever is jointed one end of a horizontal knife plate, the other end being cut with an inclined slot which slides on a pin in a standard fixed in the sole. The knife is screwed to the plate; "the cutting strain does not, however, act on the holding screws, as the upper edge of the knife bears against projections" on the plate. The tobacco is laid on a board or plate fitted to slide transversely under the knife; it can be fed forward by hand or "automatically in various ways." According to one plan a rack fixed on the under side of the sliding plate is acted upon by a pinion on a spindle. There is a *grooved pulley on the spindle*, and a small lever piece centred on

the spindle has jointed to it a frictional piece which grips and turns the pulley when the lever piece is pulled up. A small screw adjustable in the lever piece to give more or less feed is connected by a cord to the main lever.

The details may be modified in various ways:—The feed may be effected by means of a screw or pinion. The feed plate may “turn round on a pivot.” The knife may be shaped to serve as both knife and knife plate; it may cut down to a board or “work past a counter cutting or resisting edge.” A second knife may be fixed on the other side of the knife plate. The machine may be made double by extending the lever on the other side of its fulcrum “and there connecting to it duplicate cutting and other details.” The feed plate may be omitted and the tobacco may be fed up to one or two pins fixed to the sole behind the knife.

[Printed, &c. Drawing.]

A.D. 1865, September 15.—N° 2362.

MYERS, SAUL.—(*A communication from Elijah Miers.*)—“Improvements in smoking pipes and cigar holders, and an improved tobacco cartridge to be used with the same.” The same apparatus can be used as a pipe for cut tobacco, or as a cartridge holder, or as a cigar holder. It consists of (1) a short hollow cylinder of wood or other material closed at one end, and having fitted into the other a stem, by preference, of vulcanite or hard india-rubber; (2) a globular or other shaped receptacle for the oil (by preference of ebonite), with a hollow neck of metal, screwed or otherwise secured to the under side of the cylinder; (3) a tube (on the upper side of the cylinder) “which at a little distance upwards is fitted with a small disc or collar piece,” and a little above this with “a screwed or tapered shoulder” to receive the pipe bowl or the cartridge; above the shoulder it is tapered “so as to enter the side or end of the cigar;” and (4) a removable bowl of wood, meerschaum, or other material.

The cartridge is, by preference, “of an inverted, truncated, slightly conical shape;” the bottom is formed with a disc of cardboard or other suitable substance perforated in the centre; the sides are of thin paper, which when charged with tobacco is turned over on the top—or the top may be closed by a disc of thin paper—and they are coated with a solution of gum “to receive a covering of tobacco dust, which not only improves

" the appearance of the cartridge, but also insures perfect and
 " even combustion of the thin paper forming the sides."

[Printed, 8d. Drawing.]

A.D. 1865, October 2.—N° 2525. (* *)

JENNER, FREDERIC.—"An improvement in clasps or fasten-
 " ings." Cigar cases are amongst the articles to which this
 invention is applicable. It is described as applied to a memoran-
 dum book. A clasp is hinged to one flap and is provided with a
 catch "to take behind the catch" on a plate fixed to the oppo-
 site flap. A spring is fitted into the hinge by which the clasp is
 connected to the flap, and its tendency is "to keep the clasp
 " pressed down" so as to engage the one catch in the other until
 its action is "overcome by disengaging the free end of the clasp
 " by pressing up the button" which is thereon. A plate is fixed
 to the flap "to prevent the clasp being pressed too far down when
 " the book is open;" or a stop may be employed for the same
 purpose. The spring is a strip of steel, "one end of which is
 " fixed to one of the outer gudgeons on the flap," and the other
 end "to the outer gudgeon on the clasp, thus when the clasp is
 " raised the strip of steel becomes twisted, whereby it has a ten-
 " dency to return to its normal position;" or it may be fitted so
 as to be a little twisted when the clasp is fastened, and to become
 further twisted when the clasp is raised. One or both the
 hinges which connect the flaps to the back "may have a spring
 " fitted therein, the tendency of which is to force the flaps apart."

[Printed, 6d. Drawing.]

A.D. 1865, October 6.—N° 2577.

MACHIN, THOMAS.—"Improvements in machinery or apparatus
 " for the manufacture of wooden spills." This apparatus con-
 sists of a stock, any number of cutters, and a fence or guide.
 The stock is "somewhat similar to the stock of a plane, but of
 " any suitable length, having a handle at each end." The cutters
 "are set obliquely to the longitudinal section of the stock, form-
 " ing skew cutters;" the cutting edges "are on or about the same
 " level." The guide (of either wood or iron) is attached to one
 side of the stock by means of tightening or set screws that pass
 through transverse slots in the guide, by which means it "may
 " be shifted nearer to or further from the irons, according to the

"width of wood to be cut into spills;" or it may be "shifted inwards at one end in order to make a different style or pattern of spill." The wood to be cut is "set on edge and gripped by screw or other fastenings or clamps to a suitable bench." Any number of shavings can be cut at one traverse of the plane, according to the number of cutters in the stock, and by the peculiar set of the cutters the shavings "will form a twist" and produce spills "twisted in a tapering helico-spiral form." Pine and cedar "may be cut side by side" by the same cutters; and the apparatus may be worked by power, "by means of any reciprocating gearing."

[Printed, *ed.* Drawing.]

A.D. 1865, November 7.—N° 2868.

BATEMAN, HYDE.—"An improved apparatus for igniting cigars or tobacco." The lights or igniters consist "of circular discs made by preference of hard papier maché, consolidated felt, wood, or other bad conductor of heat, on one side of which is affixed a piece of prepared tinder or other suitable combustible substance which is capable of burning long enough to ignite a cigar or pipe, and on the other side may be secured a piece of glass paper, sand paper, or other roughened surface, whereby a phosphoric preparation or other composition" (on the front side of each disc), which will ignite on the application of friction, may be ignited. A metallic or other tube of length sufficient to contain from twenty to thirty igniters is provided at top with a sliding cap, and at bottom with a cap secured to it by a bayonet joint. One end of a helical spring is fixed to the bottom cap, and a "cartridge of igniters" is placed on top of the spring. When the topmost disc has been ignited, and it is required to ignite a second, it is only necessary to knock off "that igniter which has been spent and projects from the upper end" of the tube; this will be sufficient to ignite the disc immediately below. The bottom cap will serve as a tobacco stopper.

[Printed, *ed.* Drawing.]

A.D. 1865, December 2.—N° 3102.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Louis Gilles Gallien.*)—(*Provisional protection only.*)—"An improved tray or holder for cigars or pipes and the ashes there-

"from." This tray is in the form of a saucer, oval, circular, or of other shape, "with a raised portion in the middle, having one or more grooves to receive and support one or more cigars."

For pipes recesses are formed in the raised portion to receive the bowls. The parts on each side of the raised portion serve as receptacles for the ashes. The tray may be made of any material ornamented or not, and may, if required, be placed on a stand.

[Printed, 4d. No Drawings.]

A.D. 1865, December 9.—N° 3174.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Prosper Vincent Ramel.*)—"A new method of preparing plants of the eucalyptus family and myrtacean plants, and the application thereof to the purposes of tobacco and snuff." The plants especially mentioned are the "eucalyptus odoratu, eucalyptus globulus, eucalyptus gigantea, and the myrtacean species of the same genus." The patentee asserts that they "do not contain the injurious properties of tobacco," that "their smoke contains no injurious vapour," that their ashes "possess no corrosive or astringent action," and that "the juices expressed and the essences evaporated from them are agreeable both to the taste and smell."

The leaves are dried, submitted "to a bleaching treatment by hot water or damp steam," and then desiccated; in this state they are fit for the ordinary operations tobacco usually undergoes to be manufactured into snuff, cigars, cakes, rolls, or otherwise."

[Printed, 4d. No Drawings.]

A.D. 1865, December 28.—N° 3360.

KNELLER, CHARLES LAURIESTON WILLYAMS.—(*Provisional protection only.*)—"An improved mode of igniting cigars, cigarettes, and other similar articles." A small lump of paste: "made of a mixture of gunpowder and pulverized charcoal mixed with gum solution" is stuck on to the end of the cigar or cigarette, and any igniting composition, by preference, "the well-known composition of which vesuvians are made," is applied to the end of the lump. When the cigar is thoroughly lighted, "the lump of carbon may be knocked off."

[Printed, 4d. No Drawings.]

1866.

A.D. 1866, February 17.—N° 510.

LOPEZ-Y-MÚÑOZ, MANUEL JOSÉ.—“Improvements in machinery for making cigarettes.” The tobacco is placed in a hopper containing an agitator “to which a rocking motion is given by a connecting rod and a crank on the main axis.” The bottom of the hopper is closed by a roller “in which is a cavity of a size to hold the quantity of tobacco required to make a cigarette.” The roller is turned round at suitable intervals “by means of a star wheel on its axis resting in contact with a wheel on the main axis;” the greater part of the circumference of this wheel is plain, and the remainder toothed; the teeth cause the roller to revolve, and at each revolution it drops the proper quantity of tobacco. Meanwhile a continuous strip of paper passes from a drum between feed rollers and is pressed down by a plunger between four small forming rollers, “so that the end of the paper assumes a U form, and the rollers are so placed as to retain it in this form.” The feed rollers “are actuated by a train of wheels connecting them with a star wheel, which in turn is moved at intervals by a wheel on the main axis.” The forming rollers “are all geared by pinions with a star wheel revolving in contact with a wheel on the main axis.” The motions of the plunger (which performs several duties) “are produced by pins or teeth on a wheel on the main axis coming against an arm on an axis, which is thus caused partially to revolve; on this axis are other arms pressing down upon levers, which at one end are centred to the frame, and at the other are connected by joints with the plunger;” each pin in passing causes a descent of the plunger a greater or less distance as required, and “a spring afterwards causes it to rise.” The tobacco drops into the U, and the plunger “descends two or three times” to press it down; one of the pressures “is somewhat prolonged to hold firmly the end of the paper,” while shears cut off the proper length. One of the shear blades is stationary; the other “is connected by a rod or link with a crank, on the axis of which is a pinion, and a toothed segment fixed to a wheel on the main axis rotates this pinion and gives a forward and backward motion to the shear blade at the time required.” The forming rollers now rotate in the same direction,

thereby rolling up the paper and its contents, and during the rolling up the plunger "descends several times and compresses " it." When the cigarette is rolled up, and whilst it is firmly held by the plunger, "the ends are flattened down by instruments, one on each end;" these "are mounted on centres " beyond the ends of the cigarette," and a downward motion is given to them "by an axis which is partly rotated at the proper " time by a pin on one of the wheels on the main axis coming " against an arm fixed on the first-mentioned axis, and then other " arms on the same axis press down levers with which these " folding instruments are linked." Other instruments turn up and dent in the paper so as to complete the cigarette; these "are " mounted on axes to which a semi-rotation is given;" for this purpose "there is on each axis a pinion gearing with a rack, and " the racks are moved by levers on an axis, which in turn is " actuated by a pin on one of the wheels on the main axis;" springs bring back the parts when the action is completed. When the cigarette is finished off, the two forming rollers on one side of it recede from the other two, being mounted on a swing frame to enable them to do so. "The two frames holding the " forming rollers are locked together during the making of the " cigarette by notched levers catching on to the swinging frame, " but when the cigarette is finished, these levers are caused by a " cam on the main axis to free the frame, and a pin on one of " the wheels on the main axis then strikes a projection on the " swinging frame and gives the movement required," and the plunger descending pushes out the cigarette. A very minute description of the machine is given in the Specification.

[Printed, 1s. 6d. Drawings.]

A.D. 1866, February 27.—N^o 602.

MYERS, MYER, MYERS, MAURICE, and HILL, WILLIAM.—
"A new or improved apparatus for the use of smokers, parts of
"which apparatus are applicable to the securing or holding
"together of cigarette and other papers, as well as securing or
"connecting together straps and bands." The apparatus is an
instrument for cutting off the tips of cigars, and with it is combined (when required) a stiletto and cigar holder. The cutter consists "of two short pieces of circular, oval, or rectangular
"tubing, partially sliding one over the other, made by preference
"of thin sheet steel," gilt or otherwise ornamented. The tubes

" may be held by a spring joint on each side, the cutting edges " being between them," or a helical spring may be placed in the upper portion of the inner tube for the purpose of keeping the tubes "in a state of expansion." In the sides of the inner tube are slots, and a pin passing through them and the outer tube connects the tubes and limits the "range of action;" on the top of the inner tube is a metal cap; at one end of the pin is a knob, and at the other a loop for a ring. To hold the tubes when not in use "in a compressed position" the free end of a spring fixed to the upper tube "catches in the top part of the aperture in the "lower tube."

The stiletto is made "of thin sheet steel with small gores " removed from it that the points may be brought together;" it may be attached to the ring by a bit of elastic, or be fitted to the cap "by passing down concentrically through it and the " helical spring." Being hollow, "a small single or double " elastic cord" may be inserted which connects it to the cap; "this permits the stiletto to be passed through cigarette or other " papers and then placed at right angles," and allows it to be used as a cigar holder, the cigar being held in position "by the " contracting force of the elastic material."

In the drawing is "exhibited a general cigar and tobacco pouch " shewing the cigarette papers retained in the case by the stiletto " passing first through an eyeletted hole in the case, then through " the papers, and afterwards placed at right angles for retaining " them in that position;" at the other end of this compartment of the case is a cigar cutter "with an additional outer and lower " metallic case" which turns half round, "thereby covering or " exposing the aperture and cutting edges."

The principle on which the cutters are united may be applied to fasten pouches or other like cases; a rectangular tube is riveted to the pouch; one end of an elastic strap is attached to the tube, and the other to a smaller rectangular tube carrying a spring detent. "For connecting round thong or other straps" circular tubing is preferred.

[Printed, 8d. Drawing.]

A.D. 1866, April 2.—N^o 943.

VORS, MARIE PIERRE ERNEST.—"An improved instrument " for cleaning pipes used in smoking." The instrument is a rod

sufficiently rigid and supple for the purpose, "and which in its sectional form may have various configurations." It may be a round or square metal rod covered with caoutchouc or other suitable material, and "sufficiently flexible to enable it to be introduced at the mouth-piece of the stem and to issue at the bowl." Or it may be a plain rod "of hardened caoutchouc, boiled leather, whalebone, horn, gutta percha, or other material combining rigidity with flexibility," round or square in section, or round or oval or square and formed into a spiral. Or it may be of any of the above-named materials "with a spiral projecting rib on the rod," or it may be made with "one end of it in the form of a spiral." The bottom of the rod may be formed "with a hollow or solid enlargement" or with "a bundle of filaments." The rod "may be ornamented by silvering, gilding, painting, or otherwise."

[Printed, *ed.* Drawing.]

A.D. 1866, April 9.—N^o 1013. (* *)

RAWLINGS, WILLIAM, and REST, WILHELMUS.—(*Provisional protection only.*)—"Improvements in fastenings for purses, pocket books, bags, cigar cases, boxes, and similar receptacles." The locking part of this fastening consists of a sliding plate, carrying a bolt which protrudes through a slot in a second plate, "such plate, with a third or back plate, being secured by rivets or otherwise to the lid or flap of the receptacle to which it is to be attached." A small aperture is made in the back plate to admit a staple, which is secured to the body of the receptacle. The staple is caught by the end of the bolt, and "a helical spring is introduced and caused to press against the bolt, thereby tending to keep the fastening always locked, except when the sliding plate with its bolt is pushed back."

[Printed, *4d.* No Drawings.]

A.D. 1866, April 12.—N^o 1036.

HASELTINE, GEORGE.—(*A communication from George Washington Hoglen and Stephen Decator Grafflin.*)—"An improved machine for cutting tobacco for chewing and smoking." The framework is of cast-iron and rectangular; within it are "metallic platforms," reaching nearly its whole length, and so arranged "as to form between themselves a throat, the widest

"portion of which is at the end farthest from the cutter." Near the outer ends of the platforms, and a little beyond them, are rollers, and near the inner ends are cog shafts, and two endless belts pass, each over a platform, roller, and cog shaft. Each belt is composed "of several (four or more) chains arranged side by side" in such manner "as to break joints and thus avoid continuous cavities across the face of the belts;" and the cog shafts "are composed of four cog-wheels upon a shaft," so constructed as to "break joints like the belts." To tighten the belts the rollers "are provided with sliding journal boxes," and by driving in wedges "the bearings are forced outwards," thus moving the rollers "farther from the cog shafts."

On the main shaft is a hub furnished with two wings, which have cutters "extending beyond the hub sufficiently to pass the outlet of the throat;" on it are also the driving pulley and its loose pulley, and two sliding worms, one "constructed with three distinct threads," so that it will advance "a large gear wheel" (carried by a cross shaft) "three cogs at each revolution," the other with only one thread, therefore advancing the wheel only one cog, when in gear. Parallel with the pulleys, "and quite near them" is a rock shaft "provided with a sliding sleeve," which slides, but without turning, by means of a screw or stud passing through the sleeve into a groove in the shaft. The sleeve carries a fork "for slipping the belt from the fixed to the loose pulley, and vice versa;" upon one end of the rock shaft is a friction brake, and a hand lever moves the sleeve laterally, "so as to ship or unship the belt, or to press the brake down upon the pulley."

"Upon the opposite extremity" of the cross shaft is a wheel, "secured by a washer and thumb-screw, so that it may be removed and a larger or smaller one be substituted;" this wheel gears with a train of wheels, whereby motion is conveyed to the endless belts. To allow of the substitution a swinging frame, composed of a Y shaped plate and bar (detailed in the specification), when elevated carries with it the first wheel with which the before-mentioned one gears.

On the large gear wheel is a clutch secured to the cross shaft by a set screw working in a groove, "so as to preclude longitudinal sliding," and "the usual clutch fork" engages or disengages the clutch.

[Printed, 1s. Drawings.]

A.D. 1866, April 18.—N° 1088.

WHITE, GEORGE.—(*A communication from Jean Hochapfel and George Hochapfel.*)—"Improvements in pipes for smoking tobacco," whereby any liquid "from the mouth of the smoker" is effectually prevented from entering the bowl, and the formation of "rancid nicotine juice" is hindered. The stem of the pipe is removable and fits into the stem of the bowl; this latter is continued in a slanting direction to nearly the bottom of the bowl, so as to form a reservoir. The connection between the bowl and the reservoir is by means of a channel, one end of which opens into the lower part of the bowl, "whereas the other end, closed by a moveable plug," communicates with the upper part or middle of the reservoir "by means of a connecting hole." The arrangement of the channel "requires to be modified more or less according to the particular shape of the pipe," which may be of any suitable material.

[Printed, 8d. Drawings.]

A.D. 1866, April 21.—N° 1132.

BUISSON, FRANÇOIS CÉSAR.—"Treating and applying a certain vegetable plant for the purposes of the tobacco plant." The plant is the tuberous sunflower or Jerusalem artichoke; the leaves are dried and submitted to the same operations as the leaves of the tobacco plant, "in order to manufacture therefrom a tobacco for smoking, cigars, rolls, cakes, snuff, or other usual forms." The smoke arising from the leaves when thus treated is "odorous, sweet, and slightly acidulous; it is not acrid, and has no poisonous effect."

[Printed, 4d. No Drawings.]

A.D. 1866, April 25.—N° 1166.

BUTCHER, HENRY CHARLES.—"An apparatus to be used for piercing and holding cigars, and as a tobacco-stopper, pencil-case, whistle, seal, tooth-pick, or watch key." This apparatus "is usually composed of four parts," namely, an outer tube, an inner sliding tube, a helical spring, and a piercer. The lower end of the outer tube is formed into (or has attached to it) a ring which serves as a cigar holder, and the ring carries "a bottom piece which forms a tobacco stopper." A pincer or needle is fastened to the bottom of the inner tube; it passes through the

spring (which is situate inside the outer tube between the lower ends of the two tubes) out through a hole in the bottom of the outer tube, and into a recess in the bottom of the ring. Or the piercer may be a prolongation of the spring. When not in use, the piercer is concealed within the tube.

The tip of the cigar is thrust through the ring, the sliding tube is pressed down, compresses the spring, and drives the piercer through the cigar.

Modification. The outer tube has cut in it a slot L shaped, and when the piercer is not in use it appears across the ring with its point in the recess. The inner tube is furnished with a pin, which when the apparatus is not required is retained in the horizontal part of the slot.

The upper end of the sliding tube may unscrew and carry a tooth-pick, watch key, or other article; or the tube itself may be made into a whistle. The lower end of the ring may have attached to it a tube to hold a pencil or a pen; or it may be connected to a penknife, &c.

[Printed, 8d. Drawing.]

A.D. 1866, May 7.—N^o 1301.

CLARK, WILLIAM.—(*A communication from François Dedeyn.*)—(*Provisional protection only.*)—"Improvements in lighting apparatus applicable to lighting cigars and pipes." The apparatus is "in the form of a cylinder or box of any kind to contain "pyrophorous material," to which is added "thirty per cent. of "acetate or nitrate of lead." It is composed of (1) an outer case, having an aperture in the upper portion on one side; (2) a reservoir of cardboard (which contains the material) closed at bottom with a cap; (3) a cover for the reservoir made of copper and pierced with a hole; (4) a "distributor of the pyrophorous material;" it is made "with a stamped bottom" which is provided with a hole "and conical cavity" of the necessary depth; and (5) a "partition of a piece" with the case, separating the cover from the stamped bottom; it also is provided with a hole. The cover, partition, and bottom, "together form a circular channel," in which the material must pass before it can enter the distributor. "By imparting a slight rotating movement to the distributor" the hole in its bottom coincides with the hole in the partition, "when the material can enter the conical cavity;" a reverse movement "closes the hole" in the bottom "and brings the

"cavity opposite the opening" in the case; "this presents the pyrophorous material to contact with the air, when it immediately ignites."

In a modification, a "metal covering enclosing the cardboard case" is provided with a tube; the cap or cover of the outer case "is furnished at its upper part with a cup," in which "is placed the pyrophorous material when it is wished to light a cigar or pipe;" and this cover "has on the under side a piece of india-rubber which hermetically closes the tube."

[Printed, 6d. Drawing.]

A.D. 1866, May 19.—N° 1418.

BROWN, JOHN.—"Improvements in machinery for cutting or slicing timber, more especially applicable for cutting laths for building purposes, tobacco, or any fibrous substance." The improvements consist "in giving lateral as well as upward and downward movements in combination to blades or knives used for cutting or slicing." The machine described has only one blade, but any number "may be used worked by eccentrics or crank and rocking shafts." The principal parts are (1) a frame or table of wood or other material, (2) rocking shafts or cranks, to which is attached (3) a frame of cast iron, or other metal, having fixed to it a long steel blade, (4) an eccentric or crank on the driving shaft, connected by a rod to the cutting frame, and (5) feed or friction rollers "fixed alongside of the blade" and set in motion "by means of an eccentric, camb, or crank fixed on the driving shaft connected with suitable rods."

The explanatory sheet of drawings shews "certain modifications:"—The feed roller is on the upper, and the friction rollers on the under side of the table. A revolving lever and toothed wheel and pawl are connected to the feed roller, and the position and length of the lever are so arranged, that, when the cutting frame is raised, an "angular shaped catch" on the upper side of the frame strikes the lever, thereby moving the wheel and the roller. "By this arrangement the feed motion is worked by the same eccentric" as the cutting frame. Pieces of wood are supported endwise immediately beneath the blade "to preserve the sharpness" and to "afford a solid basis for the blade to act against." A spring is placed on the top of each bearing of the feed roller to press it firmly upon the material being cut.

[Printed, 10d. Drawing.]

A.D. 1866, May 24.—N° 1453.

SNELL, WILLIAM.—(*A communication from Louis Goetsch.*)—(*Provisional protection only.*)—"Improvements in tobacco pipes." This invention "applies to pipes of various forms, and composed " of various materials;" it consists in an arrangement "for " allowing the escape of oil, juice, and moisture, and thus keeping " the tobacco in the bowl of the pipe dry to the last morsel." If the pipe has a straight stem, it is pierced throughout its length, and the end of the passage at the back of the bowl is closed by a cap while the pipe is being smoked. At the bottom of the bowl are one or more holes which communicate with the main passage. If the pipe has a curved stem, "or in any case if more convenient," the mouth-piece may be made removable "to facilitate " the operation of cleaning" by passing a wire or other pipe cleaner through from end to end.

[Printed, &c. Drawing.]

A.D. 1866, June 27.—N° 1713.

CLYDESDALE, ROBERT HARDIE, and WILSON, JAMES EASON.—(*Provisional protection only.*)—"Improvements in apparatus for finishing tobacco." The finishing stove is provided with appliances "for confining the tobacco in a compressed state " whilst in the stove." The tobacco is arranged in layers with metal plates between them, and with a strong cover plate "which " is acted on by one or more screws working in tapped sockets " in a bar of proper form and strength in the roof of the stove " chamber or in the cover plate itself;" but the required pressure may be produced by other means, such as levers or cams. A false bottom is by preference introduced for the tobacco to lie upon, instead of lying upon the bottom of the stove chamber; this "prevents the too intense action of the heat on the bottom layer " of tobacco, and permits of dishes of water being introduced " beneath it for the formation of vapour or steam." If preferred, steam may be let in from a separate boiler by a pipe, the supply from which can be accurately adjusted by means of a stop-valve. The stove chamber is formed of iron plates, "and is " directly heated by means of flues from a fire directly beneath " it, such flues diverging to and passing all round the stove in " the most effective manner."

[Printed, &c. No Drawings.]

A.D. 1866, September 14.—N° 2359.

CHESHIRE, COLEN HEWER.—"An improved metal spring box " or case for fusees, cigars, and other purposes." This case consists of two parts, one sliding in the other; the inner part has attached to each side an elastic spring, which is secured to a hook at the closed end of the outer part. The inner part has for "about one-half of its length at the top" a lid hinged to it, and opening by a spring, "so that when the inner case is drawn out " the lid flies open, and by means of the spring is locked and "prevented from running back into the outer one;" again when the lid is pressed down, the spring "releases the inner case, and "it flies back into the outer case, being drawn by the elastic "springs on each side." The patentee does not confine himself to fixing the elastic springs in this particular way, nor to any shape or size of case, nor to any class of metal.

[Printed, 6d. Drawing.]

A.D. 1866, October 6.—N° 2579. (* *)

CLARK, WILLIAM.—(*A communication from Joseph Schoenfeld.*)—"Improvements in fastenings for purses, cigar cases, travelling "bags, and other similar articles." The fastening is described as attached to a purse or bag made with a hinged metal frame; the locking part consists of a piece of thin sheet iron cut with two projections, one of which is notched or recessed, whereas the other is pressed on by a spring. One end of the spring is riveted to the frame, and a fixed stop limits the action of the spring. A button or stud passing through the frame is riveted to the locking part, "whereby the latter may be rotated." On the portion of the frame opposite to the notch is a catch having an inclined surface; this slips into the notch and holds the portions of the frame together, and to open them it is simply necessary to turn the stud. There may be modified arrangements of the stud and spring. Instead of a simple stud a solid or hollow head may be connected to the locking part by means of a pin which passes through the frame; the head "extends over both parts of the "frame and so may be readily acted on by the fingers." Or a jointed knob may be used, the shank "being of a square form in "section," in order to turn the bolt. The spring may be "bent at "a right angle at its extremity," in which case the stop would be

dispensed with, or it may be arranged to bear on the notched end of the locking part "and underneath it."

[Printed, 1s. Drawings.]

A.D. 1866, October 12.—N° 2637.

BANCROFT, JAMES MASSEY.—(*Provisional protection only.*)—"Improvements in canisters or receptacles for containing tobacco." The canister is composed of an inner and an outer casing; the space between the two "is filled with cocoa-nut fibre or other material, which is a good non-conductor of heat," and the upper edges of the two casings are bent and soldered together or otherwise secured. The top of the inner casing is closed by a hinged lid. Tobacco put into a canister so constructed will be always "slightly moist," and may be kept therein longer "than in any other without detriment."

[Printed, 4d. No Drawings.]

A.D. 1866, October 12.—N° 2641.

GRÜNE, WILHELM.—(*Provisional protection only.*)—"Developing invisible photographs by the action of the ammonia vapours evolved from tobacco, and improvements in cigar tubes or holders and tobacco pipes for holding the said photographs." The inventor, having discovered that the ammonia vapours evolved from burning tobacco are capable of "re-developing silvered photographs on papers, discoloured or bleached with chloride of mercury," has applied his discovery to cigar tubes and pipes. In cigar tubes he forms "a transverse opening, over which the prepared paper is fastened with gum, starch, or other glutinous matter, so that when the cigar is lit and the smoke drawn inwards, the ammonia vapours will act upon the paper and cause the photograph to be developed." In tobacco pipes he adopts "a similar plan;" or he places behind the bowl "a chamber having an opening, in which is placed a slide holding the paper, there being a space or perforation around the slide to prevent the draught from being impeded."

[Printed, 4d. No Drawings.]

A.D. 1866, December 7.—N° 3229.

RICHARDS, WILLIAM ANTIL.—"An improved receptacle for tobacco." This pouch is made in two parts, each of caoutchouc

or other elastic or flexible substance. The lower or bag part has a frame extending all round it; the frame is covered with the material, and is so disposed that when the bag is in a horizontal position, it "will be presented flatwise or broadwise;" but it may be "rounded or convex." The upper part or cover "has no "rigid frame nor rigid edge, but it is formed with an elastic edge, "lip, or flange," which is cemented or otherwise fastened to the lower part at the back, the front being left free for opening and closing. The flange stretches or laps over the edge of the frame "and keeps the article firmly closed without any fastening "appliance being required." Caoutchouc strengthening pieces are cemented to the two parts "at the outer ends of their junction." The ordinary shape of the frame is oval, and it is in some cases made to project outwards, instead of inwards, from the lower part.

[Printed, 8d. Drawing.]

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 — (*Beaumont Institute, Mile End*).
 — (*Bedford Working Men's Institute, Spitalfields*).
 — (*Birkbeck Institution, Southampton Buildings, Chancery Lane*).
 — (*Bow Common Working Men's Club, Devon's Road, Bow Common*).
 — (*Christchurch Working Men's Club, New Street, Lark Hall Lane, Clapham*).
 — (*Clerkenwell Club, Lower Rosoman Street*).
 — (*Holloway Working Men's Club and Institute, Holloway Road*).
 — (*Literary and Scientific Society, Wellington Street, Islington*).
 — (*Literary and Scientific Institution, Walworth*).
 — (*St. James and Soho Working Men's Club, Rupert Street, Soho*).
 — (*St. Mary Charterhouse Working Men's Club, Golden Lane*).
 — (*South London Working Men's College, Blackfriars Road*).
 — (*Southwark Working Men's Club, Broadwall, Stamford Street*).
 — (*Spring Vale Institution, Hammersmith*).
 — (*Walworth Literary and Scientific Institution*).
 — (*Working Men's Club, Brixton Hill*).
 — (*Working Men's Club, St. Mark's, Victoria Docks*).
 — (*Working Men's Club and Institute Union, Strand*).
 — (*Working Men's Club and Institute, Battersea*).
 — (*Working Men's College, Great Ormond Street*).
 Loughborough (*Working Men's Club and Institute*).
 Madeley (*Anstice Memorial, Workmen's Club and Institute*).
 Manchester (*Athenæum*).
 — (*Law Library*).
 — (*Mechanics' Institution*).
 — (*Natural History Museum, Peter Street*).
 — (*Portico Library, Mosely Street*).
 — (*Royal Exchange Library*).
 Mansfield (*Co-operative Industrial Society*).
 — (*Mechanics', Artizans', and Apprentices' Library*).
 Merthyr-Tydfil (*South Wales Institute of Engineers*).
 Middlesbrough (*Mechanics' Institution*).
 Modbury (*Mechanics' Institution*).
 Mossley (*Mechanics' Institute*).
 Newark (*Mechanics' Institute*).
 Newcastle-upon-Tyne (*Mechanics' Institution*).

Newcastle-upon-Tyne (*Working Men's Club*).
 New Mills, near Stockport (*Mechanics' Institute*).
 Newport, Isle of Wight (*Young Men's Society and Reading Room*).
 Northampton (*Mechanics' Institute*).
 Nottingham (*Free Library*).
 ——— (*Mechanics' Institution*).
 ——— (*Subscription Library*).
 Bromley House).
 Oldham (*Analytic Literary Institution*).
 ——— (*Mechanics' Institution, Ver-neth*).
 Ormskirk (*Public Library*).
 Oswestry (*Institute*).
 Patricroft (*Mechanics' Institution*).
 Pembroke Dock (*Mechanics' Institute*).
 Pendleton (*Mechanics' Institution*).
 Penryn (*Working Men's Club and Reading Room*).
 Perth (*Mechanics' Library, High Street*).
 Peterborough (*Mechanics' Institution*).
 Plymouth (*Working Men's Institute*).
 Poole (*Literary and Scientific Institution*).
 ——— (*Mechanics' Institute*).
 Portsea (*Athenæum and Mechanics' Institution*).
 Preston (*Avenham Institution*).
 ——— (*Society of Useful Knowledge*).
 Rawtenstall (*Mechanics' Institution*).
 Richmond (*Working Men's College*).
 Rotherham (*Rotherham and Masbro' Literary and Mechanics' Institute*).
 Royston (*Institute*).
 Ryde, Isle of Wight (*Philosophical and Scientific Society*).
 Saffron Walden (*Literary and Scientific Institution*).
 St. Just (*Institution*).
 St. Leonard's (*Mechanics' Institution*).
 Salford (*Working Men's Club*).
 Saltaire (*Literary Institute*).
 Selby (*Mechanics' Institute*).
 Sheffield (*Branch Free Library*).
 ——— (*Literary and Philosophical Society, School of Arts*).
 Skipton, Yorkshire (*Mechanics' Institute*).
 Southampton (*Hartley Institution*).
 ——— (*Polytechnic Institution*).
 Southport (*Athenæum*).
 South Shields (*Working Men's Institute and Club*).
 Spalding (*Mechanics' Institute*).
 ——— (*Christian Young Men's Association*).
 Staines (*Literary and Scientific Institution*).

Staines (*Mechanics' Institute and Reading Room*).
 Stamford (*Institution*).
 Stourbridge (*Church of England Association*).
 ——— (*Iron Works Reading Room and Library*).
 ——— (*Mechanics' Institution*).
 ——— (*Working Men's Institute*).
 Stratford (*Working Men's Hall*).
 Sunderland (*Working Men's Club*).
 Swansea (*Royal Institution of South Wales*).
 ——— (*Working Man's Institute*).
 Tavistock (*Mechanics' Institute*).
 ——— (*Public Library*).
 Thornton, near Bradford (*Mechanics' Institute*).
 Thornton Heath, Croydon (*Workmen's Club*).
 Todmorden (*Mechanics' Institution*).
 Truro (*Cornwall County Library*).
 ——— (*Institution*).
 ——— (*Royal Institution of Cornwall*).
 Tunbridge Wells (*Mechanics' Institution*).
 ——— (*Society of Literature and Science*).
 Turton near Bolton (*Chapel Town Institute*).
 Ulverston (*Temperance Hall*).
 Uttoxeter (*Mechanics' Literary Institute*).
 Wakefield (*Mechanics' Institute*).
 Watford (*Literary Institute*).
 Wells, Somerset (*Mechanics' Institution, Grove Lane*).
 ——— (*Young Men's Society*).
 Whaleybridge (*Mechanics' Institute*).
 Whitby (*Institute*).
 ——— (*Museum*).
 ——— (*Subscription Library*).
 Whitehaven (*Mechanics' Institute*).
 ——— (*Working Men's Reading Room*).
 Wisbeach (*Mechanics' Institute*).
 Wolverhampton (*Library*).
 Wolverton (*Institute*).
 Woodbridge (*Literary and Mechanics' Institute*).
 ——— (*Working Men's Hall*).
 Worcester (*Railway Literary Institution*).
 ——— (*Workman's Hall*).
 Workington (*Mechanics' Institution*).
 York (*Church Institute*).
 ——— (*Institute of Popular Science, &c.*).
 ——— (*Railway Library*).

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 Chester (*Mechanics' Institute, St. John Street*).
 Coalbrookdale (*Literary and Scientific Institution*).
 Coventry (*Watchmakers' Association*).
 Dublin (*Dublin Library, D'Olier Street*).
 Edinburgh (*Horological Society*).
 Ennis (*Public Library*).
 Gloucester (*Working Men's Institute, Southgate Street*).
 Ipswich (*Mechanics' Institute, Tavern Street*).
 Kew (*Library of the Royal Gardens*).
 Kingston, Herefordshire (*Reading Institute*).
 Leominster (*Literary Institute*).
 London (*House of Lords*).
 — (*House of Commons*).
 — (*Hon. Soc. of Gray's Inn*).
 — " " (*Inner Temple*).
 — " " (*Lincoln's Inn*).
 — " " (*Middle Temple*).
 — (*Aeronautical Society*).
 — (*British Horological Institute*).
 — (*General Post Office*).
 — (*Institution of Civil Engineers*).
 — (*Odontological Society*).

London (*Royal Society*).
 — (*United Service Museum*).
 Manchester (*Literary and Philosophical Society, George Street*).
 — (*Mechanics' Institution, David Street*).
 Newcastle-upon-Tyne (*North of England Institute of Mining Engineers*).
 Oxford (*Bodleian Library*).
 Stretford, near Manchester (*Mechanics' Institute*).
 Swindon, New (*Mechanics' Institute*).
 Tamworth (*Library and Reading Room, George Street*).
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